BAY AREA REGIONAL RAIL PLAN

Technical Memorandum 4c

Engineering Environmental Issues & Costs

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EarthTech
A tyco International Ltd. Company
DMJM HARRIS | AECOM

INTRODUCTION

Scope: For each study alternative, consultant shall perform cost estimation to an appropriate conceptual level of confidence of railroad track, grade and subgrade construction, including major incidental structures. Cost and environmental issues represent prominent concerns in bay crossings, and should be clearly reflected in the execution of this subtask. Input is anticipated from HSR team for cost estimate consistency.

This technical memorandum only addresses the cost associated with each study corridor for the 2050 configuration, Alternatives 1 and 2. Environmental Issues are addressed in detail in technical Memorandum 4m – Environmental Screening of Regional Rail Alternatives. Engineering Issues are addresses in Technical Memorandum 4b – Conceptual Civil Engineering and Major Bay Crossings.

Studied Corridors

The rail corridors listed below were estimated in this report. These corridors are described in detail in Tech Memo 4b – Conceptual Civil and Structural Engineering and Major Bay Crossings, and illustrated in figures 1 and 2 on the following pages, under each Study Alternative.

Study Alternative 1 shows major BART extensions with service expansion of the standard railroad based services. Alternative 2 shows BART as a "metro" service with extensive light weight electrified service for the railroad based services.

The BART infield stations are shown under Alternative 1. The table at the end of this section is a summary of the costs of each corridor under each studied alternative.

US 101 North (San Francisco to Cloverdale)

1 Smart Corridor: Cloverdale to Larkspur (Alt 1) to Richmond (Alt 2)

North Bay (US 101 to I-80)

2 Ignacio to Fairfield/Suisun

3 St Helena to Vallejo

I-80 (Auburn to Oakland)

4 Auburn to Sacramento

5 Sacramento to Richmond

6 Richmond to Oakland

Central Valley

7 Stockton to Richmond

8 Tracy to Martinez

9 Sacramento to Merced

Dumbarton

10 Redwood Jct. to Newark

11 Newark to Niles Junction

Tri-Valley

12 Niles JCT to Pleasanton

13 Pleasanton to Livermore

14 Livermore to Tracy

15 Tracy to Stockton

16 Tracy to Patterson

East Bay (Oakland to San Jose)

17 Oakland to San Jose

Peninsula (San Francisco to San Jose)

18 San Francisco to San Jose

South Counties

19 San Jose to Gilroy
20 Gilroy to Salinas
21 Santa Cruz to Watsonville Jct.
22 Castroville to Monterey
23 Gilroy to Hollister

Transbay

24 West Oakland to San Francisco Regional Rail (Alt 2 only)

BART

25 BART Fremont to Martinez (I-680) (Alt 1 only)
26 BART Oakland 4th Track (Alt1 only)
27 Bay Crossing BART West Oakland Wye to Geary Corridor (Alt 1 only)
28 Bay Crossing BART West Oakland Wye to Presidio (Alt 1 only)
29 BART Extension to Livermore: Dublin to Greenville (Alt 1) to Isabel (Alt 2)
30 BART Extension to Hercules (Alt 1 only)
31 BART Fremont to warm Springs
32 BART Warm Springs to San Jose
33 BART Infill Station – West Dublin
34 BART Infill Station - Irvington
35 BART Infill Station - Calaveras
36 BART Infill Station - Albany
37 BART Infill Station – Union City
38 BART Infill Station – San Antonio
39 BART Infill Station – San Francisco 30th Street

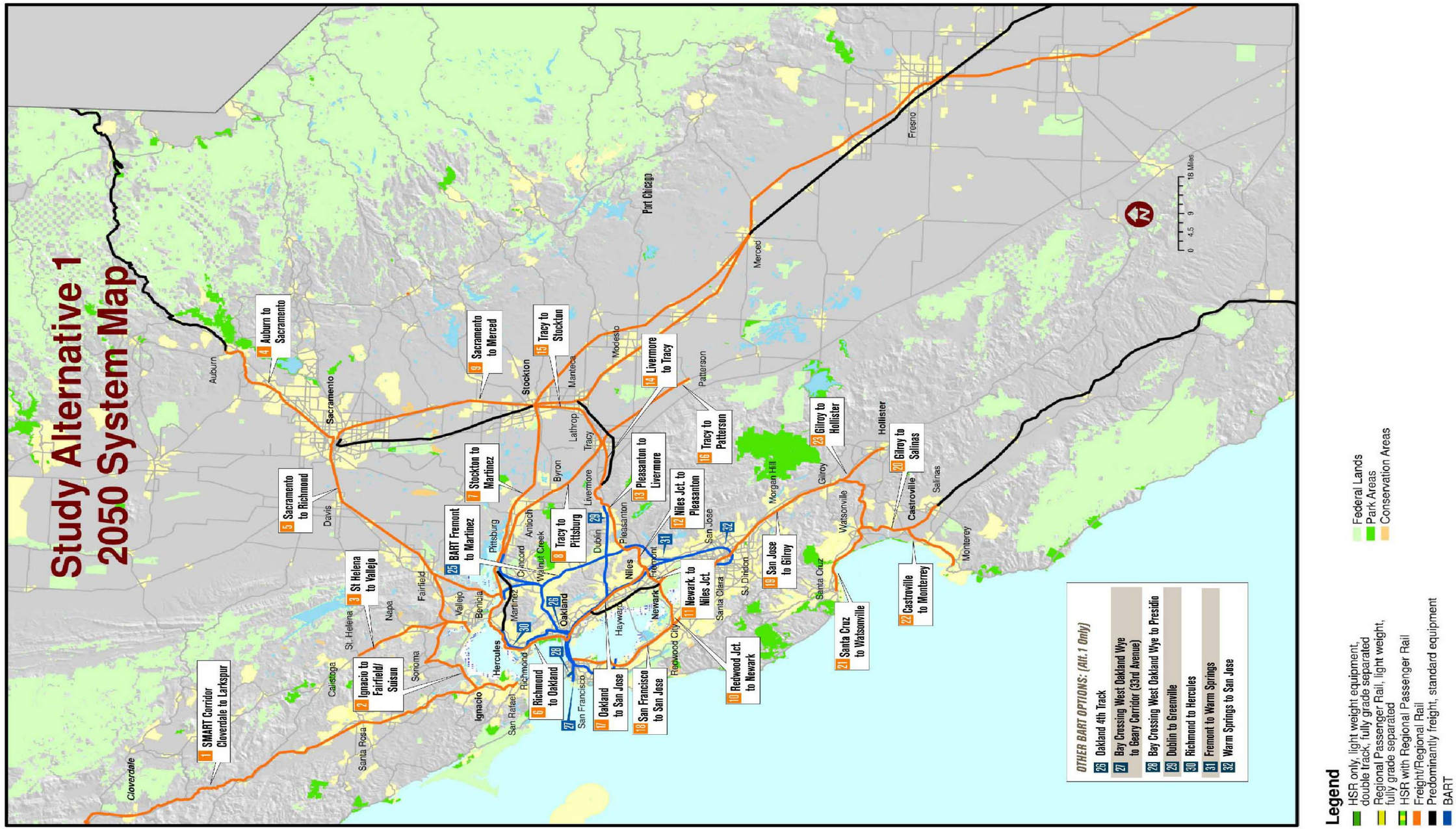

FIGURE 1 – Study Alternative 1

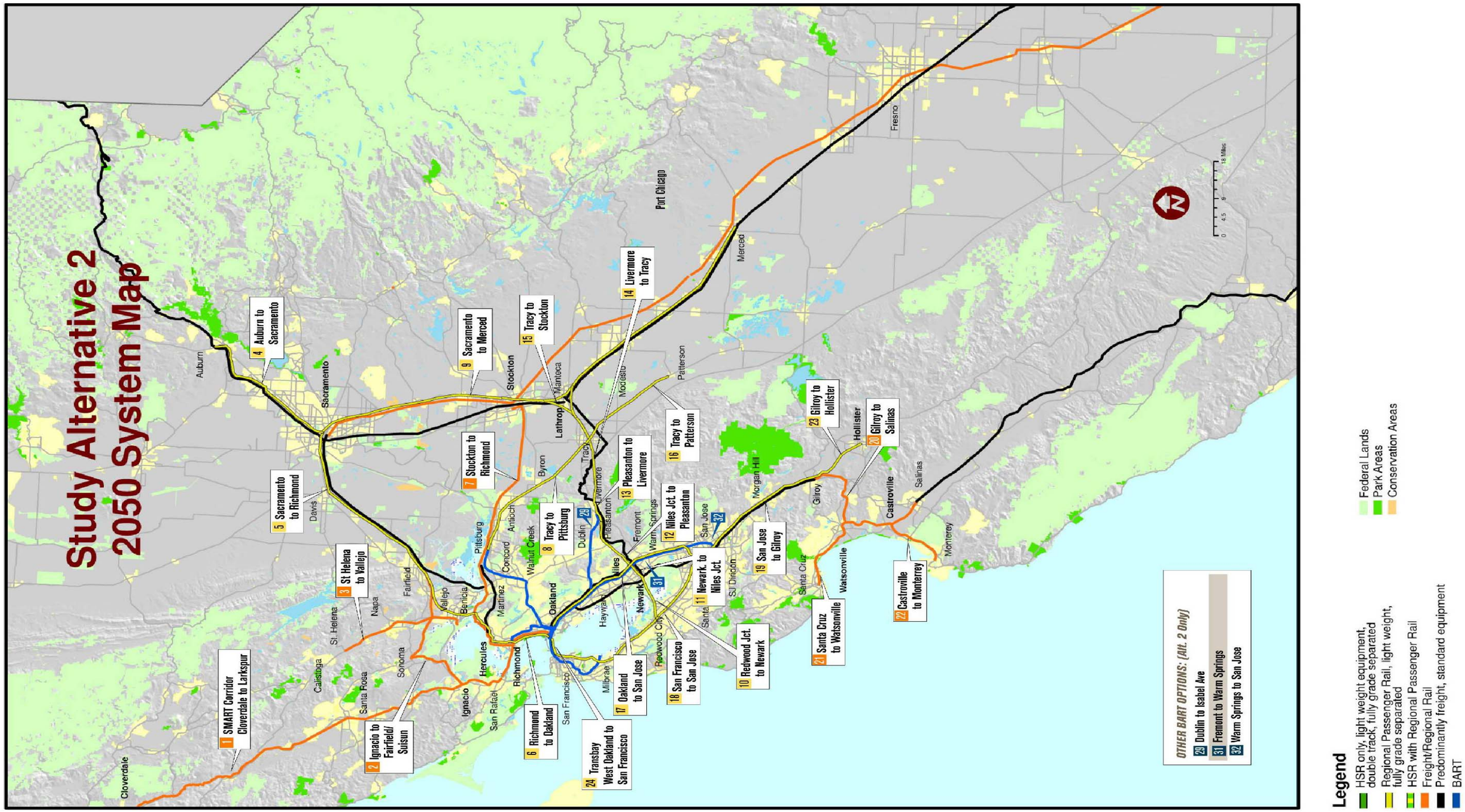

FIGURE 2 – Study Alternative 2

CAPITAL COST SUMMARY TABLE

	STUDIED CORRIDORS	Cost Summary *(rounded up to nearest million)*	
		Study Alternative 1	Study Alternative 2
	US 101 North (San Francisco to Cloverdale)	**$478,000,000**	**$1,775,000,000**
1	Smart Corridor Cloverdale to Larkspur (Alt 1) to Richmond (Alt 2) - *Alt 2 includes new Richmond rail bridge.*	$478,000,000	$1,775,000,000
	North Bay (US 101 to I-80)	**$740,000,000**	**$740,000,000**
2	Ignacio to Fairfield/Suisun	$322,000,000	$322,000,000
3	St Helena to Vallejo	$418,000,000	$418,000,000
	I-80 (Auburn to Oakland)	**$2,164,000,000**	**$4,149,000,000**
4	Auburn to Sacramento	$428,000,000	$895,000,000
5	Sacramento to Richmond	$1,020,000,000	$2,387,000,000
6	Richmond to Oakland	$716,000,000	$867,000,000
	Central Valley	**$3,685,000,000**	**$6,099,000,000**
7	Stockton to Martinez (Alt.1) to Richmond (Atl. 2)	$343,000,000	$343,000,000
8	Tracy to Pittsburg *(Alternative 2 has double track)*	$546,000,000	$893,000,000
9	Sacramento to Merced	$2,796,000,000	$4,863,000,000
	Dumbarton	**$751,000,000**	**$1,257,000,000**
10	Redwood Jct. to Newark	$321,000,000	$710,000,000
11	Newark to Niles Junction	$430,000,000	$547,000,000
	Tri-Valley	**$917,000,000**	**$3,900,000,000**
12	Niles JCT to Pleasanton	$93,000,000	$1,035,000,000
13	Pleasanton to Livermore	$236,000,000	$581,000,000
14	Livermore to Tracy	$162,000,000	$1,167,000,000
15	Tracy to Stockton	$303,000,000	$763,000,000
16	Tracy to Patterson	$123,000,000	$354,000,000
	East Bay (Oakland to San Jose)	**$924,000,000**	**$3,129,000,000**
17	Oakland to San Jose	$924,000,000	$3,129,000,000
	Peninsula (San Francisco to San Jose)	**$5,237,000,000**	**$5,237,000,000**
18	San Francisco to San Jose	$5,237,000,000	$5,237,000,000
	South Counties	**$1,597,000,000**	**$2,535,000,000**
19	San Jose to Gilroy	$352,000,000	$1,137,000,000
20	Gilroy to Salinas	$288,000,000	$288,000,000
21	Santa Cruz to Watsonville Jct.	$616,000,000	$616,000,000
22	Castroville to Monterey	$253,000,000	$253,000,000
23	**Gilroy to Hollister**	$88,000,000	$241,000,000
	Transbay		**$2,123,000,000**
24	West Oakland to San Francisco Regional Rail *(Alt 2 only)*	*NA*	$2,123,000,000
	BART Corridors *(current eBART alignment is included in the Tri-Valley corridors)*	**$25,740,000,000**	**$6,454,000,000**
25	BART Freemont to Martinez (I-680) *(Alt 1 only)*	$3,933,000,000	*NA*
26	BART Oakland 4th Track *(Alt1 only)*	$317,000,000	*NA*
27	Bay Crossing BART West Oakland Wye to Presidio/Geary Corridor *(Alt 1 only)*	$11,969,000,000	*NA*
28	Bart Extension to Livermore: Dublin to Greenville (Alt 1) to Isabel (Alt 2) - *per I-580 BART to Livermore FSR*	$1,212,000,000	$650,000,000
29	Bart Extension to Hercules *(Alt 1)*	$1,620,000,000	*NA*
30	Bart Fremont to Warm Springs *(per BART WSX EIS dated June 2006, escalated from 2004 to 2006 dollars)*	$759,000,000	$759,000,000
31	Bart Warm Springs to San Jose *(per SVRT Project Estimate, escalated from 2005 to 2006 dollars)*	$4,983,000,000	$4,983,000,000
32	Bart Infill Station - West Dublin *(incl. two ped grade sep. Xsings and two parking structures, per final const. cost)*	$62,000,000	$62,000,000
33	Bart Infill Station - Irvington *(Incls. Int. Facility per BART WSX FEIS dated June 2006, escalated to 2006 dollars)*	$89,000,000	*NA*
34	Bart Infill Station - Calaveras	$60,000,000	*NA*
35	Bart Infill Station - Albany	$52,000,000	*NA*
36	Bart Infill Station - Union City *(incl. line relocation. & site Imprvmt. per UC Study dated May 2005 escalated. to 2006 dollars)*	$110,000,000	*NA*
37	Bart Infill Station - Oakland San Antonio	$52,000,000	*NA*
38	Bart Infill Station - San Francisco 30th Street *(per BART Study Report of May 2003 escalated. to 2006 dollars)*	$522,000,000	*NA*
	TOTAL REGIONAL COSTS	**$42,233,000,000**	**$35,275,000,000**

OPERATING COST SUMMARY TABLE

Service year 2050 (in 2006 dollars)

CORRIDORS	ALTERNATIVE 1			ALTERNATIVE 2		
	Train Hours/Day	Operation Cost Per Year (assuming $1600-$1800/train-hr & 300 days/year)		Train Hours/Day	Operation Cost Per Year (assuming $1600-$1800/train-hr & 300 days/year)	
US-101 North Corridor		**$46,872,000**	**$52,731,000**		**$56,182,553**	**$63,205,372**
Cloverdale <-> Larkspur	98	$46,872,000	$52,731,000	65	$31,248,000	$35,154,000
Santa Rosa <-> Stockton	-			52	$24,934,553	$28,051,372
North Bay Corridors		**$28,122,115**	**$31,637,379**		**$55,450,426**	**$62,381,730**
San Rafael <-> Fairfield/Vacaville	31	$15,042,115	$16,922,379	61	$29,290,426	$32,951,730
Saint Helena <-> Vallejo Ferry	27	$13,080,000	$14,715,000	55	$26,160,000	$29,430,000
I-80 / East Bay / I-880 Corridor		**$116,168,546**	**$130,689,614**		**$19,440,000**	**$21,870,000**
Sacramento <-> San Jose	145	$69,573,638	$78,270,343	-		
Auburn <-> San Jose	97	$46,594,908	$52,419,271	-		
Oakland <-> San Jose	-			41	$19,440,000	$21,870,000
Sacramento <-> Jack London Square	-			-		
Peninsula Corridor		**$150,911,101**	**$169,774,989**		**$192,611,063**	**$216,687,445**
San Francisco <-> Gilroy	-			-		
San Francisco <-> San Jose	-			-		
San Francisco <-> San Jose (express)	-			-		
Salinas <-> SF 4th & Townsend (local)	84	$40,176,625	$45,198,703	-		
Salinas <-> SF Transbay Terminal (local)	154	$73,933,116	$83,174,756	-		
San Jose <-> SF 4th & Townsend (express)	27	$12,978,000	$14,600,250	-		
San Jose <-> SF Transbay Terminal (express)	50	$23,823,360	$26,801,280	-		
Hollister <-> San Francisco (local)	-			90	$43,008,000	$48,384,000
San Jose <-> Auburn (local)	-			155	$74,265,532	$83,548,723
San Jose <-> Sacramento (express)	-			157	$75,337,531	$84,754,722
South Counties Corridors		**$24,528,000**	**$27,594,000**		**$47,165,944**	**$53,061,687**
Santa Cruz <-> Monterey	41	$19,488,000	$21,924,000	81	$38,976,000	$43,848,000
Gilroy <-> Hollister	11	$5,040,000	$5,670,000	-		
Gilroy <-> Salinas	-			17	$8,189,944	$9,213,687
Transbay Corridors		**$22,560,000**	**$25,380,000**		**$38,052,160**	**$42,808,680**
Merced <-> San Francisco	-			31	$14,896,960	$16,759,080
Union City <-> Millbrae	21	$10,310,400	$11,599,200	-		
Union City <-> San Jose	26	$12,249,600	$13,780,800	11	$5,155,200	$5,799,600
West Oakland <-> San Jose	-			38	$18,000,000	$20,250,000
Central Valley Corridors		**$108,351,591**	**$121,895,539**		**$30,240,000**	**$34,020,000**
Merced <-> Jack London Square via Stockton	56	$26,841,938	$30,197,180	-		
Merced <-> Jack London Square via UPRR	91	$43,901,054	$49,388,686	-		
Merced <-> Sacramento via UPRR	78	$37,608,598	$42,309,673	63	$30,240,000	$34,020,000
Tri-Valley Corridor		**$68,260,270**	**$76,792,804**		**$60,721,547**	**$68,311,740**
Stockton -> San Jose	-			-		
Sacramento <-> San Jose	142	$68,260,270	$76,792,804	-		
Sacramento <-> Hollister	-			127	$60,721,547	$68,311,740
RAIL TOTALS	***1179***	**$565,773,622**	**$636,495,325**	***1041***	**$499,863,693**	**$562,346,654**
BART						
Pittsburg/Bay Point <-> SFO	317	$151,985,633	$170,983,837	317	$151,985,633	$170,983,837
Pittsburg/Bay Point <-> 33rd Avenue (Alt. 1b)	271	$129,986,620	$146,234,947	-		
North Hercules <-> 33rd Avenue (Alt. 1b)	268	$128,475,255	$144,534,662	-		
Greenville Road <-> Millbrae	339	$162,798,542	$183,148,360	-		
Richmond <-> Millbrae	-			258	$123,954,977	$139,449,349
Isabel Avenue <-> Daly City	-			140	$67,309,152	$75,722,795
Santa Clara <-> North Hercules	397	$190,563,957	$214,384,451	-		
Santa Clara <-> Martinez	276	$132,547,154	$149,115,548	-		
Santa Clara <-> Richmond	-			186	$89,052,818	$100,184,420
Santa Clara <-> Daly City	-			190	$91,227,860	$102,631,343
SFO <-> Millbrae	14	$6,720,000	$7,560,000	14	$6,720,000	$7,560,000
BART TOTALS	***1881***	**$903,077,161**	**$1,015,961,806**	***1105***	**$530,250,440**	**$596,531,745**

COST METHODOLOGY

GENERAL BASIS OF COST ESTIMATE

A. CAPITAL COSTS

The starting point of the estimates presented in this report was the existing condition of each corridor as described in Tech Memo 4a. The improvements for each studied alternative are described in detail in Tech memo 4d. The unit costs and cost elements are per California High Speed Train Program EIR/EIS Appendix 4-A, adjusted for the Regional Rail program.

Throughout the course of this study, plan, profile and other conceptual level engineering were developed for some corridors. The cost estimates for these corridors were developed from conceptual level quantity take off. When existing cost data was available, such cost data was reviewed, revised as necessary and incorporated into this report as appropriate. Cost breakdown spreadsheets are included in the Appendix for all rail corridors except BART corridors.

The costs for most BART corridors, except for Oakland 4th track and West Oakland Wye to Geary Corridor, were developed in coordination with BART using a combination of unit costs per mile for existing BART extensions provided by BART, order of magnitude cost estimates developed during this study (for comparison purpose) and cost data from previous report, when available. For this reason cost breakdown spread sheets for BART corridors are not included in the Appendix.

The cost estimates presented in this report are in 2006 dollars for the year 2050 configuration.

The following is a list of documents used during the preparation of this report.

- Bay Area Regional Rail Tech Memo 3b – Detail Technical Description of Study Alternatives – Feb 9, 2007
- Bay Area Regional Rail Tech Memo 4a – Conditions Conf. & Traffic on Existing Systems – Nov 15, 2006
- Bay Area Regional Rail Tech Memo 4b – Conceptual Civil Engineering & Major Bay Crossings – April 4, 2007
- Bay Area Regional Rail Tech Memo 4d – Signal & Communications Systems Engineering & Costs – March 28, 2007
- Bay Area Regional Rail Tech Memo 4e – Electrification System Engineering & Costs – March 22, 2007
- Bay Area Regional Rail Tech Memo 4g - Summary of Capacity Issues – March 28, 2007
- Bay Area Regional Rail Tech Memo 4j – Principal Stations/Terminals & Connectivity Plan – January 31, 2007
- HSR Cost and Unit Prices spread sheet format
- FEIR Sonoma-Marin Area Rail Transit (SMART) - June 2006
- Capitol Corridor Intercity Passenger Service Business Plan Update – FY 2007-08 – FY 208-09
- Communication and verbal input from CCJPA, BART, HSR team and Caltrain
- I-580 BART to Livermore Study Final Report
- Glen Park Community Park Workshop – dated June 2003
- Cost Comparison of Completed and Planned BART Extensions Table (by BART) - August 16, 2007

B. OPERATING COSTS

The operating costs developed in this study are in 2006 dollars for the service anticipated in the year 2050. The unit costs used in developing these operating costs were calculated from actual annual operating costs data and train service hours per year provided by BART and the Capitol Corridor for the year 2006. The service level used in this report for the year 2050, are as described in Tech Memo 3b.

CORRIDORS DESCRIPTION

1 – SMART CORRIDOR

Alternative 1 – Cloverdale to Larkspur

This alignment is similar to the SMART Corridor alignment described on the FEIR (June 2006) with additional improvements as listed below. Our estimated cost for this alignment is $ 478 million and it includes:

- 14 stations as proposed on the FEIR (June 2006)
- 2,500' (762 meters) of track by-pass at each intermediate station.
- Site development/parking at each station.
- Does not include ROW acquisition (assumed that ROW is already owned by SMART)

In comparison the capital cost of the SMART corridor per FEIR is $387 million. However this cost does not include additional by-pass track at each intermediate station (with its corresponding signaling). Also it does not include site development/parking at each of the 14 stations.

Alternative 2 – Cloverdale to Richmond

This alignment is similar to Alt.1 from Cloverdale to Larkspur and then continues across the bay through a new Richmond-San Rafael rail bridge and onto the Richmond BART/Capitol Corridor Station.
The cost for this alternative is approx. $1.78 billion and it includes:

- New Richmond-San Rafael rail bridge: $763.5 million
- Purchasing 50 feet (15.24 meters) wide corridor of Right of Way acquisition and major utility relocation in Richmond.
- CTC signal system for the additional tracks

2 – IGNACIO TO FAIRFIELD/SUISUN

Alternative 1: The approx. cost of this alternative is $322 million and it includes the following improvements:

- Single track with 2,500' (762 meters) station sidings
- Since the track classification throughout the entire length of this corridor is either FRA Class 1 or 2, we have assumed new track throughout the entire corridor.
- Assumed two new intermediate stations plus modification to the two connecting terminus stations with connections to Smart corridor and Sacramento to Richmond line respectively.
- Includes purchasing one half the available Right Of Way from the railroad. Leaving the short line in place.
- Assume purchase of 3 acres (1.214 hectares) of land per station for site development/parking.
- property acquisition at each station
- Includes a CTC signal system

Alternative 2: same as Alt.1

3 – SANTA HELENA TO VALLEJO

Alternative 1: The approx. cost of this alternative is $418 million and it includes the following improvements:

- Single track with 2,500' (762 meters) station sidings
- Since the track classification throughout the entire length of this corridor is either FRA Class 1 or 2, we have assumed new track throughout the entire corridor.
- Eight new stations. Including one terminus stations at St. Helena, one terminus station at Vallejo with connection to the Ferry Terminal and six intermediate stations including one in Downtown Vallejo with connection to the Ignacio-Fairfield line.

- Includes purchasing one half the available Right Of Way from the railroad. Leaving the short line in place.
- Assume purchase of 3 acres (1.214 hectares) of land per station for site development/parking.
- Includes a CTC signal system

Alternative 2: same as Alt.1

4 – AUBURN TO SACRAMENTO

Alternative 1:
The estimated cost of this alternative is $428 million and includes the following improvements:

- New third main track throughout the entire length of the corridor.
- 9 Grade separated crossings
- 4 Minor street closure
- New Swanson Sacramento Station with connection to Sacramento RT
- Sacramento Maintenance facility: $50 million (per CCJPA)
- Assumes acquiring 3 Acres (1.214 hectares) of ROW for new station and 2 Acres (0.809 hectares) for maintenance facility.
- Includes a CTC signal system

Alternative 2:
The estimated cost of this alternative is $895 million and includes the following improvements:
Same as alternative 1 with the following exceptions:

- Alternative 2 it is a four track section, fully electrified.
- Includes purchasing 50 feet wide right-of-way corridor from the UPRR
- Requires a containment wall in the joint corridor with freight
- Includes a CTC signal system with cab signals

5 – SACRAMENTO TO RICHMOND

Alternative 1:
This segment goes from Sacramento to Richmond along the existing corridor through the Benicia rail bridge.
The estimated cost of this alternative is $1.02 billion and includes the following improvements:

- New third main track for the entire length of the existing corridor, except for the segment from Benicia through Martinez which remains a two track section through the existing Benicia rail bridge.
- Fairfield/Suisun Platform Rebuild: $16 million
- Fairfield/Vacaville Station approximately $45 million, including site development and parking
- Davis Station Platform Rebuild: $20 million
- Hercules Station: $15 million
- Fully grade separated crossings
- Secured fence throughout the entire corridor
- Does not require Right of Way Acquisition
- Includes a CTC signal system

Alternative 2
This segment goes along the existing corridor from Sacramento to Fairfield and then continues along a new alignment in the median of I-80 and through a new rail bridge at Carquinez to Hercules where it continues along the existing corridor to Richmond.

The estimated cost of this alternative is $2.39 billion. It includes all the improvements mentioned in alternative 1 with the following additions and/or exceptions:

- Two new main tracks to make it a four track section (separating freight from passenger) throughout the entire length of the corridor.
- New 2 tracks alignment along the median of I-80 from Fairfield to Hercules, including new rail bridge through Carquinez.
- Fully electrified.

- Includes purchasing 50 foot wide corridor of right-of-way except for the corridor portion within the I-80 median.
- Requires a containment wall in the joint corridor with freight
- Includes a CTC signal system with cab signals

6 – RICHMOND TO OAKLAND

Alternative 1:
The estimated cost of this alternative is $716 million and includes the following improvements:

- Two new tracks to convert it into a four track corridor.
- Fully grade separated.
- Secured fence throughout the entire corridor
- Does not require Right of Way acquisition
- Includes a CTC signal system

Alternative 2:
The estimated cost for this alternative is $867. It includes all the improvements of Alternative 1, plus the following:

- Includes purchasing 50 foot wide corridor of right-of-way from the UPRR.
- Purchasing 3 acres of land at each station: Richmond, Oakland, Emeryville and Berkeley
- One new station platform at each existing station.
- Fully electrified.
- Requires a containment wall in the joint corridor with freight
- Includes a CTC signal system with cab signals

7 – STOCKTON TO MARTINEZ (ALT. 1) STOCKTON TO RICHMOND (ALT. 2)

Alternative 1:
This alternative is a double track corridor that goes from Stockton to Port Chicago along the BNSF corridor and from Port Chicago to Martinez along the UPR corridor. The cost of this corridor is $343 million and it includes the following improvements:

- New second main track from Stockton to Martinez
- Grade Separated Crossings
- Does not require Right of Way Acquisition
- Includes a CTC signal system

Alternative 2:
This alternative is a double track corridor that goes from Stockton to Richmond. The segment that goes from Stockton to Martinez is the same as Alternative 1. Then Alternative 2 continues for approximately 25 miles (40.234 km) along the UPRR corridor (currently route of Capitol Corridor, Amtrak and San Joaquin) to the Richmond Capitol Corridor/BART station.

Although this Alternative is longer than Alternative 1, the estimated cost of Alternative 2 is the same as Alternative 1 because the segment from Martinez to Richmond is in good condition: FRA Class 5. Therefore **no new improvements were accounted for this Alternative from Martinez to Richmond.**

8 – TRACY TO PITTSBURG

Alternative 1:
The approx. cost of this alternative is $546 million and includes the following improvements:

- New single track with 2,500’ (762 meters) station sidings throughout the corridor.
- Since the track classification throughout the entire length of this corridor is either FRA Class 1 or 2, we have assumed removal of existing track.
- Four new stations: Empire Ave, Central Blvd, Byron & Mountain House

- does not require a corridor Right of Way Acquisition, except assume 3 acres property acquisition at each station
- Includes a CTC signal system

Alternative 2:
The approx. cost of this alternative is $893 million and includes the following improvements:

- Two new main tracks throughout the entire length of the corridor.
- Fully electrified.
- Four new Stations
- Includes purchasing 50 feet of new right-of way adjacent to the existing corridor. Assume 3 acres property acquisition at each station
- Includes a CTC signal system

9 – SACRAMENTO TO MERCED

Alternative 1:
The approx. cost of this alternative is $2.8 billion and includes the following improvements:

- Two new main tracks throughout the entire length of the corridor.
- Entire corridor is grade separated.
- Eight new Stations
- Does not require corridor Right of Way Acquisition, except assume 3 acres property acquisition at each station
- Includes a CTC signal system

Alternative 2:
The approx. cost of this alternative is $4.9 billion and includes the following improvements:

- Three new main tracks throughout the entire length of the corridor.
- Relocation of existing main track
- Entire corridor is grade separated.
- Fully electrified.
- Eight new Stations
- Eight minor crossings closure
- Includes purchasing 50 feet of new right-of way adjacent to the existing corridor, and assume 3 acres property acquisition at each station
- Includes a CTC signal system with cab signals

10 – Redwood Jct to Newark

Alternative 1:
The approx. cost of this alternative is $321 million and includes the following improvements:

- One new main track with 2500' sidings at Menlo Park and Newark stations.
- The mainline track is reconstructed in existing alignment throughout the entire length of the corridor.
- Existing single track Hwy 101 Underpass does not need replacement and a second underpass will be constructed next to it.
- Grade separate Middlefield Rd (3 tracks)
- All new grade crossing equipment (No. 9s) and concrete crossing panels to replace existing.
- Purchase of 3 Acres of land at each station.
- New bridges are same length as existing.
- Dumbarton bridge is single tracked
- Includes a CTC signal system

Alternative 2:
The approx. cost of this alternative is $710 million and includes the same improvements as Alternative 1 plus the following:

- Two new main tracks throughout the entire length of the corridor, including through Dumbarton.
- Entire corridor is electrified
- Includes a CTC signal system with cab signals

11 – Newark to Niles Jct

Alternative 1:
The approx. cost of this alternative is $430 million and includes the following improvements:

- One new main track throughout the entire length of the corridor.
- Relocation of two existing main tracks.
- 8 Grade separate crossings
- 5 minor street closure
- 2 new stations (Fremont-Centerville & Newark)
- Includes purchasing 50 feet of new right-of way adjacent to the existing corridor, and assume 3 acres property acquisition at each station
- Includes a CTC signal system

Alternative 2:
The approx. cost of this alternative is $547 million and includes the following improvements:

- Two new main tracks throughout the entire length of the corridor.
- Relocation of two existing main tracks.
- 8 Grade separate crossings
- 5 minor street closure
- 2 new stations (Fremont-Centerville & Newark)
- Entire corridor is electrified
- Includes purchasing 50 feet of new right-of way adjacent to the existing corridor, similar to HSR costs
- Includes a CTC signal system with cab signals

12 – Niles Jct to Pleasanton

Alternative 1:
The approx. cost of this alternative is $93 million and includes the following improvements:

- One new main track throughout the entire length of the corridor.
- 5 Grade separate crossings at major arterial roads such as Niles Blvd, Mission Blvd and Niles Canyon Road (3).
- 1 minor street closure
- Does not require additional corridor right of Way
- Includes a CTC signal system

Alternative 2:
The approx. cost of this alternative is $1.04 billion and includes the following improvements:

- Three new main tracks throughout the entire length of the corridor.
- Relocation existing main tracks.
- 10 Grade separate crossings
- 1 minor street closure
- Entire corridor is electrified
- Includes purchasing 60 feet of new right-of way at each end of the tunnel and subsurface easements through the canyon. Similar to HSR costs.
- Includes a CTC signal system with cab signals

13 – Pleasanton to Livermore

Alternative 1:
The approx. cost of this alternative is $236 million and includes the following improvements:

- Existing track remains in place
- Two new main tracks throughout the entire length of the corridor.
- 8 Grade separated crossings
- 3 Minor street closure
- 2 New stations
- Includes a CTC signal system

Alternative 2:
The approx. cost of this alternative is $581 million and includes the following improvements:

- Three new main tracks throughout the entire length of the corridor.
- Relocation existing main tracks.
- 3 Minor street closure
- 8 Grade separated crossings
- Over 9 km of new trackway on elevated structure.
- 3 new stations
- Entire corridor is electrified
- Includes purchasing 50 feet of new right-of way, similar to HSR costs, and assume 3 acres property acquisition at each new station
- Includes a CTC signal system with cab signals
- Requires a containment wall in the joint corridor with freight

14 – Livermore to Tracy

Alternative 1:
The approx. cost of this alternative is $162 million and includes the following improvements:

- Existing track remains in place
- One new main track throughout the entire length of the corridor.
- 5 Grade separate crossings
- 3 Minor street closure
- 2 New stations
- Does not require additional corridor right of Way
- Includes a CTC signal system

Alternative 2:
The approx. cost of this alternative is $1.17 billion and includes the following improvements:

- Two new main tracks along new corridor on elevated structure.
- Relocation existing main tracks.
- 7 Grade separate crossings
- 2 New Stations
- Entire corridor is electrified
- Includes purchasing 100 feet of new right-of way, similar to HSR costs
- Includes a CTC signal system with cab signals

15 – Tracy to Stockton

Alternative 1:
The approx. cost of this alternative is $303 million and includes the following improvements:

- Existing track remains in place
- One new main track throughout the entire length of the corridor.

- Reconstruction of Lathrop station platform
- New station at Tracy
- 3 Grade separate crossings
- 8 Grade Crossing Improvements
- Includes a CTC signal system
- Does not require additional corridor right of Way
- Assumed 3 acres of ROW at Tracy station

Alternative 2:
The approx. cost of this alternative is $763 million and includes the following improvements:

- Three new main tracks along entire corridor.
- Relocation existing main track.
- Includes the double track segment of the Wye that connects to the Sacramento-Merced line south of Manteca
- 11 Grade separate crossings
- Reconstruction of Lathrop station platform
- New Station at Tracy
- Entire corridor is electrified
- Right of Way cost per HSR estimate plus 3 acres of ROW at Tracy station
- Includes a CTC signal system with cab signals

16 – Tracy to Patterson

Alternative 1:
The approx. cost of this alternative is $123 million and includes the following improvements:

- One new main track throughout the entire length of the corridor.
- Removal of existing track
- 4 minor crossing closure
- 19 Grade Crossing Improvements
- Two new Stations
- Does not require additional corridor right of Way except for 3 acres property acquisition at each station
- Includes a CTC signal system

Alternative 2:
The approx. cost of this alternative is $354 million and includes the following improvements:

- Two new main tracks throughout the entire length of the corridor.
- Removal of existing track
- One major grade separated crossing at McArthur Dr. in Tracy.
- 5 minor crossing closure
- Entire corridor is electrified
- Two new Stations
- Includes purchasing 50 feet of new right-of way, and assume 3 acres property acquisition at each station
- Includes a CTC signal system with cab signals

17 – Oakland to San Jose

Alternative 1:
The approx. cost of this alternative is $924 million and includes the following improvements:

- Existing track remains in place
- Assume exclusive passenger service on the Oakland Sub from San Leandro to Fremont.
- Construct one new main track throughout the entire length of the corridor. Incorporate sidings onto second main track.

- Assume exclusive freight service on the Niles Sub.
- Install new connection between Oakland Sub and Centerville Line at Shinn
- Install new connection (150' double track bridge over Alameda Creek) for Niles Sub to UP Niles Canyon movements.
- Install new Systems elements on all corridors
- 15 grade separated crossings.
- 68 Grade Crossing Improvements
- Station improvements required at West Oakland, Hayward and Santa Clara.
- Assume 3 acres property acquisition at each station.
- Includes a CTC signal system

Alternative 2:
The approx. cost of this alternative is $3.12 billion and includes the following improvements:

- Three new main tracks along entire corridor.
- For passenger tracks assume they will be all new improvements on HSR alignment. Therefore used HSR cost estimate from W. Oakland to Diridon (Santa Clara per HSR segment map). Also see separate HSR cost estimate for passenger stations at W. Oakland, 12th Street Downtown Oakland, Oakland Coliseum/Airport, Union City BART, Union City Shinn, Fremont (Warm Springs).
- Assume a second main will be constructed for UPRR on Oakland Sub south of Melrose and for Coast Sub from Newark to Santa Clara.
- 38 Grade separate crossings
- Entire corridor is electrified
- Right of Way cost per HSR estimate
- Includes a CTC signal system with cab signals

18 – San Francisco to San Jose

Alternative 1:
The approx. cost of this alternative is $5.24 billion and includes the following improvements:

- Two new main tracks
- One new Station at Transbay
- Major station Improvements at: 4th & King, Diridon, Millbrae and Palo Alto
- 46 grade separated crossings.
- Fully electrified
- Includes a CTC signal system with cab signals

Alternative 2: Same as Alternative 1

19 – San Jose to Gilroy

Alternative 1:
The approx. cost of this alternative is $352 million and includes the following improvements:

- Existing track remains in place
- Incorporate existing second mainline (sidings) into the new second track. Assume existing second mainline does not need reconstruction.
- Modify each station to accommodate second track.
- Assume expansion of site development/parking for station modifications. Assume acquisition of 3 acres for each station to be modified/expanded.
- 2 Grade separate crossings
- 7 Minor street closure
- 6 New stations
- Includes a CTC signal system

Alternative 2:
The approx. cost of this alternative is $1.14 billion and includes the following improvements:

- Two new main tracks along new corridor on elevated structure. (As an alternative the Monterrey highway could be relocated to make room for the new tracks).
- Relocation existing main tracks.
- 23 Grade separate crossings
- 6 New Stations
- Entire corridor is electrified
- Includes purchasing 50 feet of new right-of way, and assume 3 acres property acquisition at each station
- Includes a CTC signal system with cab signals for the passenger line and a CTC signal system for the relocated freight lines.

20 – Gilroy to Salinas

Alternative 1:
The approx. cost of this alternative is $288 million and includes the following improvements:

- Existing track remains in place
- New Second main. Incorporate existing siding into the new second track. Assume existing second mainline does not need reconstruction.
- Assume Bloomfield Rd is to be grade separated per R. Scales
- 21 minor street closure
- Add a universal crossover at each station. Cost considered as included in track cost as there is no separate cost item for track crossovers.
- Assume existing bridges to remain. Construct new bridges for new second track.
- Add suburban station, service building and parking lot at Pajaro.
- Add suburban rural station, service building and parking lot at Castroville.
- Assume no cost for right of way to add second track. It will be donated by UPRR in exchange for increase in corridor capacity from second track.
- All new grade crossing equipment (two No.9s and concrete crossing panels) to replace existing equipment where second track is being added.
- Existing grade crossing equipment on existing two tracks crossing to remain as is in service.
- Includes a CTC signal system

Alternative 2:
Same as Alternative 1.

21 – Santa Cruz to Watsonville Jct.

Alternative 1:
The approx. cost of this alternative is $616 million and includes the following improvements:

- Existing track remains in place
- Assume all bridges to be replaced due to poor condition
- Due to light train volumes assume no new grade separations.
- 10 new stations
- Assume each station and lot will require purchase of 2 acres of suburban property on average.
- Assume a 2500' station siding track at Santa Cruz, Seascape and New Brighton stations.
- Assume no station buildings required.
- Includes a CTC signal system

Alternative 2:
Same as Alternative 1.

22 – Castroville to Monterey.

Alternative 1:
The approx. cost of this alternative is $253 million and includes the following improvements:

- Existing track remains in place
- Due to light train volumes assume no new grade separations.
- 4 New stations: Marina, CSU Monterey, Seaside and Monterey (downtown)
- Assume no station buildings required.
- 2 Minor street closure
- 20 Grade crossing Improvements
- Assume signaling, communications and wayside protection systems
- Assume each station will require purchase of 2 acres of property.
- Includes a CTC signal system

Alternative 2:
Same as Alternative 1.

23 – Gilroy to Hollister.

Alternative 1:
The approx. cost of this alternative is $88 million and includes the following improvements:

- **The estimate under this corridor is for Carnadero to Hollister. The costs for Gilroy to Canardero were included in the Gilroy to Salinas estimate.**
- Removal of existing track
- One new main track with station sidings
- Due to light train volumes assume no new grade separations.
- One new station at Hollister with parking lot located south of Fourth Street.
- Assume purchase of 3 acres of land per station for site development/parking.
- 12 Minor street closure
- 12 Grade crossing Improvements. Assume all new grade crossing equipment to replace existing.
- Assume signaling, communications and wayside protection systems
- Includes a CTC signal system

Alternative 2:
The approx. cost of this alternative is $241 million. This Alternative is similar to Alternative 1 except for the following:

- Fully grade separated
- Fully electrified
- Includes a CTC signal system with cab signals

24 - West Oakland to San Francisco Regional Rail (Alt 2 only)

Alternative 2:
The approx. cost of this alternative is $2.12 billion and includes the following improvements:

- Double track TBM tunnel
- One station
- Includes CTC signaling with cab

25 - BART Fremont to Martinez (Alt 1 only)

Alternative 1:
The approx. cost of this alternative is $3.9 billion and includes the following improvements:

- Double track BART corridor along the median of I-680

- 15 foot easement from Caltrans right of Way
- Eight stations: Martinez, Pacheco, Pleasant Hill, Danville, San Ramon, Dublin/Pleasanton, Pleasanton, Irvington
- Assume purchase of 3 acres of land per station for site development/parking.
- Includes ATC signaling

26 - BART Oakland 4th Track (Alt 1 only)

Alternative 1:
The approx. cost of this alternative is $317 million.
A detailed cost breakdown was developed for this alternative and submitted under separate cover on December 5, 2006. A copy of this report is included in the Appendix.

27 - BART Bay Crossing – West Oakland Wye to Geary Corridor (Alt 1 only)

Alternative 1:
The approx. cost of this alternative is $11.9 billion.
A detailed cost breakdown was developed for this alternative and submitted under separate cover on December 5, 2006. A copy of this report is included in the Appendix.

28 - BART Extension to Livermore: Dublin to Greenville (ALT1) to Isabel (ALT 2)
The cost for these alternatives are based on the costs listed on the Final Report for I-580 BART to Livermore Study, escalated to 2006 dollars.

Alternative 1: Dublin to Greenville:
The approx. cost of this alternative was estimated between $1 and $1.2 billion for this alternative depending on whether Caltrans implements the HOV lane project or not, respectively. For the purpose of this study, the larger of these figures was used. This alternative includes:

- Double track BART corridor Approx. 9.9 miles (15.93 km) long
- Alignment runs along the median of I-580
- Two new stations
- Layover yard at end of line

Alternative 2 Dublin to Isabel:
The approx. cost of this alternative was estimated between $514 and $650 million with and without Caltrans HOV lanes project respectively. The larger of these figures was carried on throughout this study. This alternative includes the following improvements:

- Double track BART corridor Approx. 5 miles (8.10 km) long
- Alignment runs along the median of I-580
- One new station at Isabel
- Layover yard at end of line

39 - BART Extension to Hercules (ALT1 only)

Alternative 1:
The approx. cost of this alternative is $1.6 billion and includes the following improvements

- Double track BART corridor from the existing Richmond BART station to Approx. 10.87 miles (17.5 km) long
- Four new stations: San Pablo, Hilltop Parkway, Sycamore East & Crockett East
- New yard at Richmond
- Purchase a 50’ strip of right of way along the corridor, except for the tunnel segments.
- Assume purchase of 3 acres of land per station for site development/parking.
- Assumed purchasing 2 acres of land for Yard.

31 - BART Fremont to Warm Springs

Alternative 1:
The approx. cost of this alternative is $759 million, per "BART Warm Springs Extension Final Environmental Impact Statement" dated June 2006, escalated from 2004 to 2006 dollars.

32 - BART Warm Springs to San Jose

Alternative 1:
The approx. cost of this alternative is $ 4.98 billion per SVRT project estimate escalated from 2005 dollars to 2006 dollars.

33 to 38 - BART Infield Stations

The costs for these stations were either based on estimates from previous studies or actual construction costs provided by BART for similar BART stations, escalated to 2006 dollars when appropriate. These Infield Stations and their respective costs are listed in the cost summary table on page 5.

APPENDIX

COST ESTIMATES

Bay Area Regional Rail Plan - Alternatives 1 and 2
Cost Summary Table

	STUDIED CORRIDORS	Cost Summary *(rounded up to nearest million)*	
		Study Alternative 1	**Study Alternative 2**
	US 101 North (San Francisco to Cloverdale)	**$478,000,000**	**$1,775,000,000**
1	Smart Corridor Cloverdale to Larkspur (Alt 1) to Richmond (Alt 2) - *Alt 2 includes new Richmond rail bridge.*	$478,000,000	$1,775,000,000
	North Bay (US 101 to I-80)	**$740,000,000**	**$740,000,000**
2	Ignacio to Fairfield/Suisun	$322,000,000	$322,000,000
3	St Helena to Vallejo	$418,000,000	$418,000,000
	I-80 (Auburn to Oakland)	**$2,164,000,000**	**$4,149,000,000**
4	Auburn to Sacramento	$428,000,000	$895,000,000
5	Sacramento to Richmond	$1,020,000,000	$2,387,000,000
6	Richmond to Oakland	$716,000,000	$867,000,000
	Central Valley	**$3,685,000,000**	**$6,099,000,000**
7	Stockton to Martinez (Alt.1) to Richmond (Atl. 2)	$343,000,000	$343,000,000
8	Tracy to Pittsburg *(Alternative 2 has double track)*	$546,000,000	$893,000,000
9	Sacramento to Merced	$2,796,000,000	$4,863,000,000
	Dumbarton	**$751,000,000**	**$1,257,000,000**
10	Redwood Jct. to Newark	$321,000,000	$710,000,000
11	Newark to Niles Junction	$430,000,000	$547,000,000
	Tri-Valley	**$917,000,000**	**$3,900,000,000**
12	Niles JCT to Pleasanton	$93,000,000	$1,035,000,000
13	Pleasanton to Livermore	$236,000,000	$581,000,000
14	Livermore to Tracy	$162,000,000	$1,167,000,000
15	Tracy to Stockton	$303,000,000	$763,000,000
16	Tracy to Patterson	$123,000,000	$354,000,000
	East Bay (Oakland to San Jose)	**$924,000,000**	**$3,129,000,000**
17	Oakland to San Jose	$924,000,000	$3,129,000,000
	Peninsula (San Francisco to San Jose)	**$5,237,000,000**	**$5,237,000,000**
18	San Francisco to San Jose	$5,237,000,000	$5,237,000,000
	South Counties	**$1,597,000,000**	**$2,535,000,000**
19	San Jose to Gilroy	$352,000,000	$1,137,000,000
20	Gilroy to Salinas	$288,000,000	$288,000,000
21	Santa Cruz to Watsonville Jct.	$616,000,000	$616,000,000
22	Castroville to Monterey	$253,000,000	$253,000,000
23	**Gilroy to Hollister**	$88,000,000	$241,000,000
	Transbay		**$2,123,000,000**
24	West Oakland to San Francisco Regional Rail *(Alt 2 only)*	*NA*	$2,123,000,000
	BART Corridors *(current eBART alignment is included in the Tri-Valley corridors)*	**$25,740,000,000**	**$6,454,000,000**
25	BART Freemont to Martinez (I-680) *(Alt 1 only)*	$3,933,000,000	*NA*
26	BART Oakland 4th Track *(Alt1 only)*	$317,000,000	*NA*
27	Bay Crossing BART West Oakland Wye to Presidio/Geary Corridor *(Alt 1 only)*	$11,969,000,000	*NA*
28	Bart Extension to Livermore: Dublin to Greenville (Alt 1) to Isabel (Alt 2) - *per I-580 BART to Livermore FSR*	$1,212,000,000	$650,000,000
29	Bart Extension to Hercules *(Alt 1)*	$1,620,000,000	*NA*
30	Bart Fremont to Warm Springs *(per BART WSX EIS dated June 2006, escalated from 2004 to 2006 dollars)*	$759,000,000	$759,000,000
31	Bart Warm Springs to San Jose *(per SVRT Project Estimate, escalated from 2005 to 2006 dollars)*	$4,983,000,000	$4,983,000,000
32	Bart Infill Station - West Dublin *(incl. two ped grade sep. Xsings and two parking structures, per final const. cost)*	$62,000,000	$62,000,000
33	Bart Infill Station - Irvington *(Incls. Int. Facility per BART WSX FEIS dated June 2006, escalated to 2006 dollars)*	$89,000,000	*NA*
34	Bart Infill Station - Calaveras	$60,000,000	*NA*
35	Bart Infill Station - Albany	$52,000,000	*NA*
36	Bart Infill Station - Union City *(incl. line relocation. & site Imprvmt. per UC Study dated May 2005 escalated. to 2006 dollars)*	$110,000,000	*NA*
37	Bart Infill Station - Oakland San Antonio	$52,000,000	*NA*
38	Bart Infill Station - San Francisco 30th Street *(per BART Study Report of May 2003 escalated. to 2006 dollars)*	$522,000,000	*NA*
	TOTAL REGIONAL COSTS	**$42,233,000,000**	**$35,275,000,000**

Appendix
REGIONAL RAIL ALTERNATIVES 1 2 UNIT COSTS

	COST ELEMENTS	UNIT	UNIT PRICE (YR NOV-2006)	SMART CORRIDOR				NOTES
				Alternative 1		Alternative 2		
Alignment Cost				Quantities	Item Cost	Quantities	Item Cost	
Track Items								
1	Double Track Section - At-Grade	km	$993,167	0.000	$0	0.000	$0	
2	Double Track Section - On Structure	km	$1,878,243	0.000	$0	0.000	$0	
3	Double Track Section - In Tunnel or Subway	km	$1,878,243	0.000	$0	0.000	$0	
4	Double Track Section - In Trench	km	$1,878,243	0.000	$0	0.000	$0	
5	Single Track Section - At Grade	km	$496,583	120.184	$59,681,383	120.184	$59,681,383	Incl. Sta. sidings (0.762km X 14 stations)
6	Single Track Section - On Structure	km	$939,121	0.000	$0	19.762	$18,558,915	
7	Single Track Sections - In Tunnel or Subway	km	$939,121	0.000	$0	0.000	$0	
8	Single Track Section - In Trench	km	$939,121	0.000	$0	0.000	$0	
9	Freight Double Track - At-Grade	km	$993,167	0.000	$0	0.000	$0	
10	Freight Single Track - At-Grade	km	$496,583	0.000	$0	0.000	$0	
11	Four-track construction or reconstruction	km	$1,887,657	0.000	$0	0.000	$0	
12	Crossovers	ea	$1,000,000	0.000	$0	0.000	$0	
Earthwork Items								
1	Site Preparation - Undeveloped	Hectares	$12,081	0.000	$0	0.000	$0	
2	Total Cut	m3	$9	0.000	$0	0.000	$0	
3	Total Fill	m3	$9	0.000	$0	0.000	$0	
4	Borrow	m3	$13	0.000	$0	0.000	$0	
5	Spoil	m3	$0	0.000	$0	0.000	$0	
4	Landscape/Erosion Control	Hectares	$8,075	0.000	$0	0.000	$0	
5	Security Fencing (Both Sides of R/W)	km	$101,733	0.000	$0	0.000	$0	
6	Special Drain. Facilities (5% of Earthwork Cost)				$0		$0	
Structures, Tunnels, Walls								
1	Standard Structure	km	$13,733,933	0.000	$0	0.000	$0	
2	High Structure	km	$16,480,720	0.000	$0	0.000	$0	
3	Long Span Structure	km	$37,577,568	0.000	$0	0.000	$0	
4	Waterway Crossing - New Rail Bridge (inc. approaches.)	km	$115,945,330	0.000	$0	6.585	$763,500,000	
5	Waterway Crossing - Secondary (Irrig./Canal Crossing)	km	$23,119,226	0.000	$0	0.000	$0	
6	Twin Single Track Drill & Blast (<6 Miles)	km	$75,040,254	0.000	$0	0.000	$0	
7	Twin Single Track TBM (<6 Miles)	km	$55,464,535	0.000	$0	0.000	$0	
8	Twin Single Track TBM w/3rd Tube (>6 Miles)	km	$78,846,643	0.000	$0	0.000	$0	
9	Double Track Drill & Blast	km	$83,740,573	0.000	$0	0.000	$0	
10	Double Track Mined (Soft Soil)	km	$96,247,282	0.000	$0	0.000	$0	
11	Seismic Chamber (Drill & Blast/Mined)	ea	$94,803,899	0.000	$0	0.000	$0	
12	Cut & Cover Double Track Tunnel	km	$48,123,641	0.000	$0	0.000	$0	
13	Trench Short	km	$49,668,587	0.000	$0	0.000	$0	
14	Trench Long	km	$39,272,836	0.000	$0	0.000	$0	
15	Mechanical & Electrical for Tunnels	km	$1,931,362	0.000	$0	0.000	$0	
16	Retaining Walls	km	$4,399,945	0.000	$0	0.000	$0	
17	Containment Walls	km	$1,500,559	0.000	$0	0.000	$0	
18	Single Track Cut and Cover Subway	km	$30,077,276	0.000	$0	0.000	$0	
Grade Separations								
1	Street Overcrossing RR - (Urban)	ea	$17,167,417	0.000	$0	0.000	$0	
2	Street Overcrossing RR - (Suburban)	ea	$6,485,469	0.000	$0	0.000	$0	
3	Street Overcrossing RR - (Undeveloped)	ea	$1,093,628	0.000	$0	0.000	$0	
4	Street Undercrossing RR - (Urban)	ea	$17,930,413	0.000	$0	0.000	$0	
5	Street Undercrossing RR - (Suburban)	ea	$6,866,967	0.000	$0	0.000	$0	
6	Street Undercrossing RR - (Undeveloped)	ea	$1,157,211	0.000	$0	0.000	$0	
7	Minor crossing closures	ea	$178,032	0.000	$0	0.000	$0	
Stations, Including Parking								
1	Terminal	LS	$106,346,890	0.000	$0	0.000	$0	
2	Site Development/Parking (Terminal Station)	LS	$26,586,722	0.000	$0	0.000	$0	
3	Urban	LS	$53,173,445	0.000	$0	0.000	$0	
4	Site Development/Parking (Urban Station)	LS	$13,293,361	0.000	$0	0.000	$0	
5	Suburban (Larkspur Station)	LS	$26,586,722	1.000	$26,586,722	1.000	$26,586,722	
6	Site Development/Parking (Suburban Station)	LS	$6,646,681	1.000	$6,646,681	1.000	$6,646,681	
7	Rural	LS	$13,293,361	13.000	$172,813,696	13.000	$172,813,696	
8	Site Development/Parking (Rural Station)	LS	$2,658,672	13.000	$34,562,739	13.000	$34,562,739	
9	Modification to the Richmond Station	LS	$26,586,722	0.000	$0	1.000	$26,586,722	
Yards and Shops								
1		km	$0	0.000	$0	0.000	$0	
2		km	$0	0.000	$0	0.000	$0	
3		km	$0	0.000	$0	0.000	$0	
4		km	$0	0.000	$0	0.000	$0	
Rail and Utility Relocation								
1	Single Track Relocation (Temporary)	km	$1,271,661	0.000	$0	0.000	$0	
2	Single Track Relocation (Permanent)	km	$1,271,661	0.000	$0	0.000	$0	
3	Single Track Removal	km	$63,372	0.000	$0	0.000	$0	
4	Major Utility Relocations - Dense Urban	km	$890,162	0.000	$0	0.000	$0	
5	Major Utility Relocations - Urban	km	$680,338	0.000	$0	0.000	$0	
6	Major Utility Relocations - Dense Suburban	km	$476,873	0.000	$0	13.177	$6,283,751	
7	Major Utility Relocations - Suburban	km	$273,407	0.000	$0	0.000	$0	
8	Major Utility Relocations - Undeveloped	km	$13,988	0.000	$0	0.000	$0	
Right of Way Items								
1	Right-of-Way Required for Each Segment				$0		$41,253,873	
	Dense Urban	Hectares	$4,106,412	0.000	$0	10.046	$41,253,873	
	Urban	Hectares	$2,737,608	0.000	$0	0.000	$0	
	Dense Suburban	Hectares	$1,368,804	0.000	$0	0.000	$0	
	Suburban	Hectares	$479,081	0.000	$0	0.000	$0	
	Undeveloped	Hectares	$342,201	0.000	$0	0.000	$0	
2	Right-of-Way Required for Passenger Station & Parking Facilities				$0		$0	
	Dense Urban	Hectares	$4,106,412	0.000	$0	0.000	$0	
	Urban	Hectares	$0	0.000	$0	0.000	$0	
	Dense Suburban	Hectares	$1,368,804	0.000	$0	0.000	$0	
	Suburban	Hectares	$479,081	0.000	$0	0.000	$0	
	Undeveloped	Hectares	$342,201	0.000	$0	0.000	$0	
3	Right-of-Way Required for Maintenance and Storage Facility				$0		$0	
Environmental Mitigation								
	Environmental Mitigation (3% of Line Cost)				$9,008,737		$34,694,234	
System Elements								

Appendix
REGIONAL RAIL ALTERNATIVES 1 2 UNIT COSTS

	COST ELEMENTS	UNIT	UNIT PRICE (YR NOV-2006)	SMART CORRIDOR				NOTES
				Alternative 1		Alternative 2		
Alignment Cost				Quantities	Item Cost	Quantities	Item Cost	
1	Signaling (ATC)	km	$845,654	0.000	$0	0.000	$0	
2	Signaling (CTC with cab signals)(per track km)	km	$115,625	0.000	$0	0.000	$0	
3	Signaling (CTC) single track	km	$93,750	120.184	$11,267,250	139.946	$13,119,938	
4	Signaling (CTC) double track	km	$178,125	0.000	$0	0.000	$0	
5	Communications (w/Fiber Optic Backbone)	km	$699,413	0.000	$0	0.000	$0	
6	Wayside Protection System	km	$67,144	0.000	$0	0.000	$0	
Electrification Items								
1	Traction Power Supply	km	$432,365	0.000	$0	0.000	$0	
2	Traction Power Distribution	km	$806,233	0.000	$0	0.000	$0	
Program Implementation Costs (Design, CM & Agency Cost)								
	Program Implementation Costs (25.5% Total Constr. & Procurement Cost)				$79,447,410		$287,726,839	
Contingencies								
	Contingencies (25% of Total Construction Cost)				$77,889,618		$282,085,137	
Total Construction					$311,558,470		$1,128,340,546	
Total Construction and ROW (Incl. Envir. Mitgtn)					$320,567,207		$1,204,288,653	
Grand Total					$477,904,234		$1,774,100,629	

Appendix
REGIONAL RAIL ALTERNATIVES 1 2 UNIT COSTS

	COST ELEMENTS	UNIT	UNIT PRICE (YR NOV-2006)	IGNACIO TO FAIRFIELD/SUISUN				NOTES
				Alternative 1		Alternative 2		
Alignment Cost				Quantities	Item Cost	Quantities	Item Cost	
Track Items								
1	Double Track Section - At-Grade	km	$993,167	0.000	$0	0.000	$0	
2	Double Track Section - On Structure	km	$1,878,243	0.000	$0	0.000	$0	
3	Double Track Section - In Tunnel or Subway	km	$1,878,243	0.000	$0	0.000	$0	
4	Double Track Section - In Trench	km	$1,878,243	0.000	$0	0.000	$0	
1	Single Track Section - At Grade	km	$496,583	64.288	$31,924,355	64.288	$31,924,355	Incl. Sta. sidings (0.762km X 2 stations)
6	Single Track Section - On Structure	km	$939,121	0.000	$0	0.000	$0	
7	Single Track Sections - In Tunnel or Subway	km	$939,121	0.000	$0	0.000	$0	
8	Single Track Section - In Trench	km	$939,121	0.000	$0	0.000	$0	
9	Freight Double Track - At-Grade	km	$993,167	0.000	$0	0.000	$0	
10	Freight Single Track - At-Grade	km	$496,583	0.000	$0	0.000	$0	
11	Four-track construction or reconstruction	km	$1,887,657	0.000	$0	0.000	$0	
12	Crossovers	ea	$1,000,000	0.000	$0	0.000	$0	
Earthwork Items								
1	Site Preparation - Undeveloped	Hectares	$12,081	0.000	$0	0.000	$0	
2	Total Cut	m3	$9	0.000	$0	0.000	$0	
3	Total Fill	m3	$9	0.000	$0	0.000	$0	
4	Borrow	m3	$13	0.000	$0	0.000	$0	
5	Spoil	m3	$0	0.000	$0	0.000	$0	
4	Landscape/Erosion Control	Hectares	$8,075	0.000	$0	0.000	$0	
5	Security Fencing (Both Sides of R/W)	km	$101,733	0.000	$0	0.000	$0	
6	Special Drain. Facilities (5% of Earthwork Cost)				$0		$0	
Structures, Tunnels, Walls								
1	Standard Structure	km	$13,733,933	0.000	$0	0.000	$0	
2	High Structure	km	$16,480,720	0.000	$0	0.000	$0	
3	Long Span Structure	km	$37,577,568	0.000	$0	0.000	$0	
4	Waterway Crossing - Primary	km	$28,876,734	0.000	$0	0.000	$0	
5	Waterway Crossing - Secondary (Irrig./Canal Crossing)	km	$23,119,226	0.000	$0	0.000	$0	
6	Twin Single Track Drill & Blast (<6 Miles)	km	$75,040,254	0.000	$0	0.000	$0	
7	Twin Single Track TBM (<6 Miles)	km	$55,464,535	0.000	$0	0.000	$0	
8	Twin Single Track TBM w/3rd Tube (>6 Miles)	km	$78,846,643	0.000	$0	0.000	$0	
9	Double Track Drill & Blast	km	$83,740,573	0.000	$0	0.000	$0	
10	Double Track Mined (Soft Soil)	km	$96,247,282	0.000	$0	0.000	$0	
11	Seismic Chamber (Drill & Blast/Mined)	ea	$94,803,899	0.000	$0	0.000	$0	
12	Cut & Cover Double Track Tunnel	km	$48,123,641	0.000	$0	0.000	$0	
13	Trench Short	km	$49,668,587	0.000	$0	0.000	$0	
14	Trench Long	km	$39,272,836	0.000	$0	0.000	$0	
15	Mechanical & Electrical for Tunnels	km	$1,931,362	0.000	$0	0.000	$0	
16	Retaining Walls	km	$4,399,945	0.000	$0	0.000	$0	
17	Containment Walls	km	$1,500,559	0.000	$0	0.000	$0	
18	Single Track Cut and Cover Subway	km	$30,077,276	0.000	$0	0.000	$0	
Grade Crossings								
1	Allawance for Grade Crosing Improvement	LS	$650,000	1.000	$650,000	1.000	$650,000	
2	Street Overcrossing RR - (Suburban)	ea	$6,485,469	0.000	$0	0.000	$0	
3	Street Overcrossing RR - (Undeveloped)	ea	$1,093,628	0.000	$0	0.000	$0	
4	Street Undercrossing RR - (Urban)	ea	$17,930,413	1.000	$17,930,413	1.000	$17,930,413	
5	Street Undercrossing RR - (Suburban)	ea	$6,866,967	0.000	$0	0.000	$0	
6	Street Undercrossing RR - (Undeveloped)	ea	$1,157,211	0.000	$0	0.000	$0	
7	Minor crossing closures	ea	$178,032	2.000	$356,065	2.000	$356,065	
Stations, Including Parking								
1	Terminal	LS	$106,346,890	0.000	$0	0.000	$0	
2	Site Development/Parking (Terminal Station)	LS	$26,586,722	0.000	$0	0.000	$0	
3	Urban	LS	$53,173,445	0.000	$0	0.000	$0	
4	Site Development/Parking (Urban Station)	LS	$13,293,361	0.000	$0	0.000	$0	
5	Suburban	LS	$26,586,722	0.000	$0	0.000	$0	
6	Site Development/Parking (Suburban Station)	LS	$6,646,681	0.000	$0	0.000	$0	
1	Station	LS	$13,293,361	2.000	$26,586,722	2.000	$26,586,722	
2	Site Development/Parking (Rural Station)	LS	$2,658,672	2.000	$5,317,344	2.000	$5,317,344	
9	Parking - Structure	space	$15,886	0.000	$0	0.000	$0	
10	Parking - At Grade	space	$2,277	0.000	$0	0.000	$0	
Yards and Shops								
1		km	$0	0.000	$0	0.000	$0	
2		km	$0	0.000	$0	0.000	$0	
3		km	$0	0.000	$0	0.000	$0	
4		km	$0	0.000	$0	0.000	$0	
Rail and Utility Relocation								
1	Single Track Relocation (Temporary)	km	$1,271,661	0.000	$0	0.000	$0	
2	Single Track Relocation (Permanent)	km	$1,271,661	0.000	$0	0.000	$0	
3	Single Track Removal	km	$63,372	62.764	$3,977,511	62.764	$3,977,511	
4	Major Utility Relocations - Dense Urban	km	$890,162	0.000	$0	0.000	$0	
5	Major Utility Relocations - Urban	km	$680,338	0.000	$0	0.000	$0	
6	Major Utility Relocations - Dense Suburban	km	$476,873	0.000	$0	0.000	$0	
7	Major Utility Relocations - Suburban	km	$273,407	62.764	$17,160,117	62.764	$17,160,117	
8	Major Utility Relocations - Undeveloped	km	$13,988	0.000	$0	0.000	$0	
Right of Way Items								
1	Right-of-Way Required for Each Segment				$134,108,463		$134,108,463	
	Dense Urban	Hectares	$4,106,412	0.000	$0	0.000	$0	
	Urban	Hectares	$2,737,608	0.000	$0	0.000	$0	Assumed a 50' wide strip
	Dense Suburban	Hectares	$1,368,804	97.975	$134,108,463	97.975	$134,108,463	
	Suburban	Hectares	$479,081	0.000	$0	0.000	$0	
	Undeveloped	Hectares	$342,201	0.000	$0	0.000	$0	
2	Right-of-Way Required for Passenger Station & Parking Facilities				$3,323,456		$3,323,456	
	Dense Urban	Hectares	$4,106,412	0.000	$0	0.000	$0	
	Urban	Hectares	$2,737,608	0.000	$0	0.000	$0	Assumed 3 acres (1.214 hect.) per Station
	Dense Suburban	Hectares	$1,368,804	2.428	$3,323,456	2.428	$3,323,456	
	Suburban	Hectares	$479,081	0.000	$0	0.000	$0	
	Undeveloped	Hectares	$342,201	0.000	$0	0.000	$0	
3	Right-of-Way Required for Maintenance and Storage Facility				$0		$0	
Environmental Mitigation								
	Environmental Mitigation (3% of Line Cost)				$7,240,033		$7,240,033	

Appendix
REGIONAL RAIL ALTERNATIVES 1 2 UNIT COSTS

COST ELEMENTS		UNIT	UNIT PRICE (YR NOV-2006)	IGNACIO TO FAIRFIELD/SUISUN				NOTES
				Alternative 1		Alternative 2		
Alignment Cost				Quantities	Item Cost	Quantities	Item Cost	
System Elements								
1	Signaling (CTC) single track	km	$93,750	64.288	$6,027,000	64.288	$6,027,000	
2	Signaling (CTC with cab signals)(per track km)	km	$115,625	0.000	$0	0.000	$0	
3	Signaling (CTC) double track	km	$178,125	0.000	$0	0.000	$0	
Electrification Items								
1	Traction Power Supply	km	$432,365	0.000	$0	0.000	$0	
2	Traction Power Distribution	km	$806,233	0.000	$0	0.000	$0	
Program Implementation Costs (Design, CM & Agency Cost)								
Program Implementation Costs (25.5% Total Constr. & Procurement Cost)					$28,032,030		$28,032,030	
Contingencies								
Contingencies (25% of Total Construction Cost)					$38,475,335		$38,475,335	
Total Construction					$109,929,529		$109,929,529	
Total Construction and ROW (Incl. Envir. Mitgtn)					$254,601,482		$254,601,482	
Grand Total					**$321,108,847**		**$321,108,847**	

Appendix
REGIONAL RAIL ALTERNATIVES 1 2 UNIT COSTS

	COST ELEMENTS	UNIT	UNIT PRICE (YR NOV-2006)	SANTA HELENA TO VALLEJO				NOTES
				Alternative 1		Alternative 2		
Alignment Cost				Quantities	Item Cost	Quantities	Item Cost	
Track Items								
1	Double Track Section - At-Grade	km	$993,167	0.000	$0	0.000	$0	
2	Double Track Section - On Structure	km	$1,878,243	0.000	$0	0.000	$0	
3	Double Track Section - In Tunnel or Subway	km	$1,878,243	0.000	$0	0.000	$0	
4	Double Track Section - In Trench	km	$1,878,243	0.000	$0	0.000	$0	
1	Single Track Section - At Grade	km	$496,583	57.851	$28,727,848	57.851	$28,727,848	Incl. siding at two stations.
6	Single Track Section - On Structure	km	$939,121	0.000	$0	0.000	$0	
7	Single Track Sections - In Tunnel or Subway	km	$939,121	0.000	$0	0.000	$0	
8	Single Track Section - In Trench	km	$939,121	0.000	$0	0.000	$0	
9	Freight Double Track - At-Grade	km	$993,167	0.000	$0	0.000	$0	
10	Freight Single Track - At-Grade	km	$496,583	0.000	$0	0.000	$0	
11	Four-track construction or reconstruction	km	$1,887,657	0.000	$0	0.000	$0	
12	Crossovers	ea	$1,000,000	0.000	$0	0.000	$0	
Earthwork Items								
1	Site Preparation - Undeveloped	Hectares	$12,081	0.000	$0	0.000	$0	
2	Total Cut	m3	$9	0.000	$0	0.000	$0	
3	Total Fill	m3	$9	0.000	$0	0.000	$0	
4	Borrow	m3	$13	0.000	$0	0.000	$0	
5	Spoil	m3	$0	0.000	$0	0.000	$0	
4	Landscape/Erosion Control	Hectares	$8,075	0.000	$0	0.000	$0	
5	Security Fencing (Both Sides of R/W)	km	$101,733	0.000	$0	0.000	$0	
6	Special Drain. Facilities (5% of Earthwork Cost)				$0		$0	
Structures, Tunnels, Walls								
1	Standard Structure	km	$13,733,933	0.000	$0	0.000	$0	
2	High Structure	km	$16,480,720	0.000	$0	0.000	$0	
3	Long Span Structure	km	$37,577,568	0.000	$0	0.000	$0	
4	Waterway Crossing - Primary	km	$28,876,734	0.000	$0	0.000	$0	
5	Waterway Crossing - Secondary (Irrig./Canal Crossing)	km	$23,119,226	0.000	$0	0.000	$0	
6	Twin Single Track Drill & Blast (<6 Miles)	km	$75,040,254	0.000	$0	0.000	$0	
7	Twin Single Track TBM (<6 Miles)	km	$55,464,535	0.000	$0	0.000	$0	
8	Twin Single Track TBM w/3rd Tube (>6 Miles)	km	$78,846,643	0.000	$0	0.000	$0	
9	Double Track Drill & Blast	km	$83,740,573	0.000	$0	0.000	$0	
10	Double Track Mined (Soft Soil)	km	$96,247,282	0.000	$0	0.000	$0	
11	Seismic Chamber (Drill & Blast/Mined)	ea	$94,803,899	0.000	$0	0.000	$0	
12	Cut & Cover Double Track Tunnel	km	$48,123,641	0.000	$0	0.000	$0	
13	Trench Short	km	$49,668,587	0.000	$0	0.000	$0	
14	Trench Long	km	$39,272,836	0.000	$0	0.000	$0	
15	Mechanical & Electrical for Tunnels	km	$1,931,362	0.000	$0	0.000	$0	
16	Retaining Walls	km	$4,399,945	0.000	$0	0.000	$0	
17	Containment Walls	km	$1,500,559	0.000	$0	0.000	$0	
18	Single Track Cut and Cover Subway	km	$30,077,276	0.000	$0	0.000	$0	
Grade Crossings								
1	Allawance for Grade Crosing Improvements	LS	$650,000	1.000	$650,000	1.000	$650,000	
Stations, Including Parking								
1	Station	LS	$13,293,361	8.000	$106,346,890	8.000	$106,346,890	
2	Site Development/Parking (Rural Station)	LS	$2,658,672	8.000	$21,269,378	8.000	$21,269,378	
Yards and Shops								
1		km	$0	0.000	$0	0.000	$0	
2		km	$0	0.000	$0	0.000	$0	
3		km	$0	0.000	$0	0.000	$0	
4		km	$0	0.000	$0	0.000	$0	
Rail and Utility Relocation								
1	Single Track Relocation (Temporary)	km	$1,271,661	0.000	$0	0.000	$0	
2	Single Track Relocation (Permanent)	km	$1,271,661	0.000	$0	0.000	$0	
3	Single Track Removal	km	$63,372	56.327	$3,569,583	56.327	$3,569,583	
4	Major Utility Relocations - Dense Urban	km	$890,162	0.000	$0	0.000	$0	
5	Major Utility Relocations - Urban	km	$680,338	0.000	$0	0.000	$0	
6	Major Utility Relocations - Dense Suburban	km	$476,873	0.000	$0	0.000	$0	
7	Major Utility Relocations - Suburban	km	$273,407	56.327	$15,400,197	56.327	$15,400,197	
8	Major Utility Relocations - Undeveloped	km	$13,988	56.327	$787,917	56.327	$787,917	
Right of Way Items								
1	Right-of-Way Required for Each Segment				$120,680,511		$120,680,511	
	Dense Urban	Hectares	$4,106,412	0.000	$0	0.000	$0	
	Urban	Hectares	$2,737,608	0.000	$0	0.000	$0	
	Dense Suburban	Hectares	$1,368,804	88.165	$120,680,511	88.165	$120,680,511	
	Suburban	Hectares	$479,081	0.000	$0	0.000	$0	
	Undeveloped	Hectares	$342,201	0.000	$0	0.000	$0	
2	Right-of-Way Required for Passenger Station & Parking Facilities				$13,293,826		$13,293,826	
	Dense Urban	Hectares	$4,106,412	0.000	$0	0.000	$0	
	Urban	Hectares	$2,737,608	0.000	$0	0.000	$0	
	Dense Suburban	Hectares	$1,368,804	9.712	$13,293,826	9.712	$13,293,826	Assumed 3 acres (1.214 hect.) per Station
	Suburban	Hectares	$479,081	0.000	$0	0.000	$0	
	Undeveloped	Hectares	$342,201	0.000	$0	0.000	$0	
3	Right-of-Way Required for Maintenance and Storage Facility				$0		$0	
Environmental Mitigation								
	Environmental Mitigation (3% of Line Cost)				$9,321,784		$9,321,784	
System Elements								
1	Signaling (CTC) single track	km	$93,750	57.851	$5,423,531	57.851	$5,423,531	
2	Signaling (CTC with cab signals)(per track km)	km	$115,625	0.000	$0	0.000	$0	
3	Signaling (CTC) double track	km	$178,125	0.000	$0	0.000	$0	
Electrification Items								
1	Traction Power Supply	km	$432,365	0.000	$0	0.000	$0	
2	Traction Power Distribution	km	$806,233	0.000	$0	0.000	$0	
Program Implementation Costs (Design, CM & Agency Cost)								
	Program Implementation Costs (25.5% Total Constr. & Procurement Cost)				$46,454,712		$46,454,712	
Contingencies								
	Contingencies (25% of Total Construction Cost)				$45,543,836		$45,543,836	
Total Construction					$182,175,343		$182,175,343	
Total Construction and ROW (Incl. Envir. Mitgtn)					$325,471,464		$325,471,464	
Grand Total					**$417,470,012**		**$417,470,012**	

Appendix
REGIONAL RAIL ALTERNATIVES 1 2 UNIT COSTS

	COST ELEMENTS	UNIT	UNIT PRICE (YR NOV-2006)	AUBURN TO SACRAMENTO				NOTES
				Alternative 1		Alternative 2		
Alignment Cost				Quantities	Item Cost	Quantities	Item Cost	
Track Items								
1	Double Track Section - At-Grade	km	$993,167	0.000	$0	59.341	$58,935,514	
2	Double Track Section - On Structure	km	$1,878,243	0.000	$0	0.180	$338,084	
3	Double Track Section - In Tunnel or Subway	km	$1,878,243	0.000	$0	1.634	$3,069,048	
4	Double Track Section - In Trench	km	$1,878,243	0.000	$0	0.000	$0	
5	Single Track Section - At Grade	km	$496,583	59.341	$29,467,757	0.000	$0	
6	Single Track Section - On Structure	km	$939,121	0.180	$169,042	0.000	$0	
7	Single Track Sections - In Tunnel or Subway	km	$939,121	1.634	$1,534,524	0.000	$0	
8	Single Track Section - In Trench	km	$939,121	0.000	$0	0.000	$0	
9	Freight Double Track - At-Grade	km	$993,167	0.000	$0	0.000	$0	
10	Freight Single Track - At-Grade	km	$496,583	0.000	$0	0.000	$0	
11	Four-track construction or reconstruction	km	$1,887,657	0.000	$0	0.000	$0	
12	Crossovers	ea	$1,000,000	2.000	$2,000,000	2.000	$2,000,000	
Earthwork Items								
1	Site Preparation - Undeveloped	Hectares	$12,081	149.991	$1,812,010	299.982	$3,624,020	
2	Total Cut	m3	$9	0.000	$0	0.000	$0	
3	Total Fill	m3	$9	0.000	$0	0.000	$0	
4	Borrow	m3	$13	0.000	$0	0.000	$0	
5	Spoil	m3	$0	0.000	$0	0.000	$0	
4	Landscape/Erosion Control	Hectares	$8,075	0.000	$0	0.000	$0	
5	Security Fencing (Both Sides of R/W)	km	$101,733	61.155	$6,221,472	61.155	$6,221,472	
6	Special Drain. Facilities (5% of Earthwork Cost)				$401,674		$492,275	
Structures, Tunnels, Walls								
1	Standard Structure	km	$13,733,933	0.000	$0	0.000	$0	
2	High Structure	km	$16,480,720	0.000	$0	0.000	$0	
3	Long Span Structure	km	$37,577,568	0.000	$0	0.000	$0	
4	Waterway Crossing - Primary	km	$28,876,734	0.180	$5,197,812	0.180	$5,197,812	
5	Waterway Crossing - Secondary (Irrig./Canal Crossing)	km	$23,119,226	0.000	$0	0.000	$0	
6	Twin Single Track Drill & Blast (<6 Miles)	km	$75,040,254	0.000	$0	0.000	$0	
7	Twin Single Track TBM (<6 Miles)	km	$55,464,535	0.000	$0	0.000	$0	
8	Twin Single Track TBM w/3rd Tube (>6 Miles)	km	$78,846,643	0.000	$0	0.000	$0	
9	Double Track Drill & Blast	km	$83,740,573	0.000	$0	0.000	$0	
10	Double Track Mined (Soft Soil)	km	$96,247,282	0.000	$0	0.000	$0	
11	Seismic Chamber (Drill & Blast/Mined)	ea	$94,803,899	0.000	$0	0.000	$0	
12	Double Track Cut & Cover Tunnel	km	$48,123,641	0.000	$0	1.634	$78,634,029	
13	Trench Short	km	$49,668,587	0.000	$0	0.000	$0	
14	Trench Long	km	$39,272,836	0.000	$0	0.000	$0	
15	Mechanical & Electrical for Tunnels	km	$1,931,362	1.634	$3,155,846	1.634	$3,155,846	
16	Retaining Walls	km	$4,399,945	0.000	$0	0.000	$0	
17	Containment Walls	km	$1,500,559	0.000	$0	59.521	$89,314,796	
18	Single Track Cut and Cover Subway	km	$30,077,276	1.634	$49,146,268	0.000	$0	
Grade Separations								
1	Street Overcrossing RR - (Urban)	ea	$17,167,417	0.000	$0	0.000	$0	
2	Street Overcrossing RR - (Suburban)	ea	$6,485,469	0.000	$0	0.000	$0	
3	Street Overcrossing RR - (Undeveloped)	ea	$1,093,628	0.000	$0	0.000	$0	
4	Street Undercrossing RR - (Urban)	ea	$17,930,413	0.000	$0	0.000	$0	
1	Street Undercrossing RR - (Suburban)	ea	$6,866,967	5	$34,334,834	5	$34,334,834	
2	Street Undercrossing RR - (Undeveloped)	ea	$1,157,211	4	$4,628,844	4	$4,628,844	
3	Minor street closures	ea	$178,032	4	$712,130	4	$712,130	
Stations, Including Parking								
1	Sacramento Station New Platform and Grade Separated Access	LS	$33,400,000	1.000	$33,400,000	1.000	$33,400,000	Per CCJPA Business Plan FY 2007-08 - FY 2008-09
2	New Swanston Sacramento Station	LS	$6,646,681	1.000	$20,000,000	1.000	$6,646,681	Per CCJPA Business Plan FY 2007-08 - FY 2008-09
Yards and Shops								
1	Sacramento Maintenance Facility	LS	$50,000,000	1.000	$50,000,000	1.000	$50,000,000	Per CCJPA
2		km	$0	0.000	$0	0.000	$0	
3		km	$0	0.000	$0	0.000	$0	
4		km	$0	0.000	$0	0.000	$0	
Rail and Utility Relocation								
1	Single Track Relocation (Temporary)	km	$1,271,661	0.000	$0	0.000	$0	
2	Single Track Relocation (Permanent)	km	$1,271,661	0.000	$0	0.000	$0	
3	Single Track Removal	km	$63,372	0.000	$0	0.000	$0	
4	Major Utility Relocations - Dense Urban	km	$890,162	0.000	$0	0.000	$0	
5	Major Utility Relocations - Urban	km	$680,338	0.000	$0	0.000	$0	
1	Major Utility Relocations - Dense Suburban	km	$476,873	61.155	$29,163,149	61.155	$29,163,149	Pipe & Fiberoptic lines
7	Major Utility Relocations - Suburban	km	$273,407	0.000	$0	0.000	$0	
8	Major Utility Relocations - Undeveloped	km	$13,988	0.000	$0	0.000	$0	
Right of Way Items								
1	Right-of-Way Required for Each Segment				$0		$127,572,845	
	Dense Urban	Hectares	$4,106,412	0.000	$0	0.000	$0	
	Urban	Hectares	$2,737,608	0.000	$0	0.000	$0	
	Dense Suburban	Hectares	$1,368,804	0.000	$0	93.200	$127,572,845	Assumed 50' wide strip of ROW for Alt 2 only
	Suburban	Hectares	$479,081	0.000	$0	0.000	$0	
	Undeveloped	Hectares	$342,201	0.000	$0	0.000	$0	
2	Right-of-Way Required for Passenger Station & Parking Facilities				$1,661,808		$1,661,808	
	Dense Urban	Hectares	$4,106,412	0.000	$0	0.000	$0	
	Urban	Hectares	$2,737,608	0.000	$0	0.000	$0	
	Dense Suburban	Hectares	$1,368,804	1.214	$1,661,808	1.214	$1,661,808	Assumed 3 acres (1.214 hect) per station
	Suburban	Hectares	$479,081	0.000	$0	0.000	$0	
	Undeveloped	Hectares	$342,201	0.000	$0	0.000	$0	
3	Right-of-Way Required for Maintenance and Storage Facility	Hectares	$1,368,804	0.809	$1,107,872	0.809	$1,107,872	Assumed 2 acres (0.809 hect) per yard
Environmental Mitigation								
	Environmental Mitigation (3% of Line Cost)				$8,163,451		$16,146,332	
System Elements								
1	Signaling (ATC)	km	$845,654	0.000	$0	0.000	$0	
2	Signaling (CTC with cab signals)(per track km)	km	$115,625	0.000	$0	61.155	$7,071,047	
3	Signaling (CTC) single track	km	$93,750	61.155	$5,733,281	0.000	$0	
4	Signaling (CTC) double track	km	$178,125	0.000	$0	0.000	$0	
5	Communications (w/Fiber Optic Backbone)	km	$699,413	0.000	$0	0.000	$0	
6	Wayside Protection System	km	$67,144	0.000	$0	61.155	$4,106,171	
Electrification Items								

Appendix
REGIONAL RAIL ALTERNATIVES 1 2 UNIT COSTS

COST ELEMENTS		UNIT	UNIT PRICE (YR NOV-2006)	AUBURN TO SACRAMENTO				NOTES
				Alternative 1		Alternative 2		
Alignment Cost				Quantities	Item Cost	Quantities	Item Cost	
1	Traction Power Supply	km	$432,365	0.000	$0	61.155	$26,441,255	
2	Traction Power Distribution	km	$806,233	0.000	$0	61.155	$49,305,164	
Program Implementation Costs (Design, CM & Agency Cost)								
Program Implementation Costs (25.5% Total Constr. & Procurement Cost)					$70,655,054		$126,682,004	
Contingencies (PER SCREENING)								
Contingencies (25% of Total Construction Cost)					$69,269,661		$124,198,043	
Total Construction					$277,078,644		$496,792,172	
Total Construction and ROW (Incl. Envir. Mitgtn)					$288,011,774		$643,281,028	
Grand Total					**$427,936,489**		**$894,161,074**	

Appendix
REGIONAL RAIL ALTERNATIVES 1 2 UNIT COSTS

	COST ELEMENTS	UNIT	UNIT PRICE (YR NOV-2006)	SACRAMENTO TO RICHMOND				NOTES
				Alternative 1		Alternative 2		
Alignment Cost				Quantities	Item Cost	Quantities	Item Cost	
Track Items								
1	Double Track Section - At-Grade	km	$993,167	0.000	$0	94.270	$93,625,839	
2	Double Track Section - On Structure	km	$1,878,243	21.600	$40,570,039	31.600	$59,352,465	*Incl. Segment along I-80*
3	Double Track Section - In Tunnel or Subway	km	$1,878,243	0.000	$0	0.000	$0	
4	Double Track Section - In Trench	km	$1,878,243	0.000	$0	0.000	$0	
5	Single Track Section - At Grade	km	$496,583	94.270	$46,812,920	0.000	$0	
6	Single Track Section - On Structure	km	$939,121	0.000	$0	0.000	$0	
7	Single Track Sections - In Tunnel or Subway	km	$939,121	0.000	$0	0.000	$0	
8	Single Track Section - In Trench	km	$939,121	0.000	$0	0.000	$0	
9	Freight Double Track - At-Grade	km	$993,167	0.000	$0	42.000	$41,713,008	
10	Freight Single Track - At-Grade	km	$496,583	0.000	$0	0.000	$0	
11	Four-track construction or reconstruction	km	$1,887,657	0.000	$0	0.000	$0	
12	Crossovers	ea	$1,000,000	4.000	$4,000,000	6.000	$6,000,000	
Earthwork Items								
1	Site Preparation - Undeveloped	Hectares	$12,081	0.000	$0	0.000	$0	
2	Total Cut	m3	$9	0.000	$0	0.000	$0	
3	Total Fill	m3	$9	0.000	$0	0.000	$0	
4	Borrow	m3	$13	0.000	$0	0.000	$0	
5	Spoil	m3	$0	0.000	$0	0.000	$0	
4	Landscape/Erosion Control	Hectares	$8,075	0.000	$0	0.000	$0	
2	Security Fencing (Both Sides of R/W)	km	$101,733	115.870	$11,787,784	115.870	$11,787,784	
3	Special Drain. Facilities (5% of Earthwork Cost)				$589,389		$589,389	
Structures, Tunnels, Walls								
1	Standard Structure	km	$13,733,933	20.000	$274,678,669	30.000	$412,018,004	
2	High Structure	km	$16,480,720	0.000	$0	0.000	$0	
3	Long Span Structure	km	$37,577,568	0.000	$0	0.000	$0	
2	Waterway Crossing - Carquinez (incl. approaches)	km	$139,375,000	0.000	$0	1.600	$223,000,000	*Per independent estimate*
3	Waterway Crossing - Secondary (Irrig./Canal Crossing)	km	$23,119,226	0.000	$0	0.000	$0	
4	Twin Single Track Drill & Blast (<6 Miles)	km	$75,040,254	0.000	$0	0.000	$0	
5	Twin Single Track TBM (<6 Miles)	km	$55,464,535	0.000	$0	0.000	$0	
6	Twin Single Track TBM w/3rd Tube (>6 Miles)	km	$78,846,643	0.000	$0	0.000	$0	
7	Double Track Drill & Blast	km	$83,740,573	0.000	$0	0.000	$0	
8	Double Track Mined (Soft Soil)	km	$96,247,282	0.000	$0	0.000	$0	
9	Seismic Chamber (Drill & Blast/Mined)	ea	$94,803,899	0.000	$0	0.000	$0	
10	Cut & Cover Double Track Tunnel	km	$48,123,641	0.000	$0	0.000	$0	
11	Trench Short	km	$49,668,587	0.000	$0	0.000	$0	
12	Trench Long	km	$39,272,836	0.000	$0	0.000	$0	
13	Mechanical & Electrical for Tunnels	km	$1,931,362	0.000	$0	0.000	$0	
14	Retaining Walls	km	$4,399,945	0.000	$0	0.000	$0	
15	Containment Walls	km	$1,500,559	0.000	$0	115.870	$173,869,817	
16	Single Track Cut and Cover Subway	km	$30,077,276	0.000	$0	0.000	$0	
Grade Separations								
1	Street Overcrossing RR - (Urban)	ea	$17,167,417	0.000	$0	0.000	$0	
2	Street Overcrossing RR - (Suburban)	ea	$6,485,469	0.000	$0	0.000	$0	
3	Street Overcrossing RR - (Undeveloped)	ea	$1,093,628	0.000	$0	0.000	$0	
4	Street Undercrossing RR - (Urban)	ea	$17,930,413	0.000	$0	0.000	$0	
5	Street Undercrossing RR - (Suburban)	ea	$6,866,967	12.000	$82,403,601	3.000	$20,600,900	
6	Street Undercrossing RR - (Undeveloped)	ea	$1,157,211	0.000	$0	0.000	$0	
7	Minor crossing closures	ea	$178,032	2.000	$356,065	2.000	$356,065	
Stations, Including Parking								
1	Fairfield/Vacaville Station	LS	$45,000,000	1.000	$45,000,000	1.000	$45,000,000	
2	Fairfield/Suisun Platform Rebuild	LS	$16,000,000	1.000	$16,000,000	1.000	$16,000,000	*Per CCJPA*
3	Davis Station	LS	$20,000,000	1.000	$20,000,000	1.000	$20,000,000	*Per CCJPA*
4	New Stations (Cordelia, Redwood St, Carquinez & Herc.)	LS	$13,293,361	4.000	$53,173,445	4.000	$53,173,445	
5	Site Development/Parking (Rural Station)	LS	$2,658,672	2.000	$5,317,344	2.000	$5,317,344	
Yards and Shops								
1		km	$0	0.000	$0	0.000	$0	
2		km	$0	0.000	$0	0.000	$0	
3		km	$0	0.000	$0	0.000	$0	
4		km	$0	0.000	$0	0.000	$0	
Rail and Utility Relocation								
1	Single Track Relocation (Temporary)	km	$1,271,661	0.000	$0	0.000	$0	
2	Single Track Relocation (Permanent)	km	$1,271,661	0.000	$0	0.000	$0	
3	Single Track Removal	km	$63,372	0.000	$0	115.870	$7,342,971	
1	Major Utility Relocations - Dense Urban	km	$890,162	11.587	$10,314,311	11.587	$10,314,311	
2	Major Utility Relocations - Urban	km	$680,338	34.761	$23,649,242	34.761	$23,649,242	
6	Major Utility Relocations - Dense Suburban	km	$476,873	0.000	$0	0.000	$0	
3	Major Utility Relocations - Suburban	km	$273,407	69.522	$19,007,802	69.522	$19,007,802	
8	Major Utility Relocations - Undeveloped	km	$13,988	0.000	$0	0.000	$0	
Right of Way Items								
1	Right-of-Way Required for Each Segment				$0		$262,572,055	
	Dense Urban	Hectares	$4,106,412	0.000	$0	0.000	$0	
	Urban	Hectares	$2,737,608	0.000	$0	0.000	$0	
	Dense Suburban	Hectares	$1,368,804	0.000	$0	191.826	$262,572,055	50' wide Strip
	Suburban	Hectares	$479,081	0.000	$0	0.000	$0	
	Undeveloped	Hectares	$342,201	0.000	$0	0.000	$0	
2	Right-of-Way Required for Passenger Station & Parking Facilities				$0		$0	
	Dense Urban	Hectares	$4,106,412	0.000	$0	0.000	$0	
	Urban	Hectares	$2,737,608	0.000	$0	0.000	$0	
	Dense Suburban	Hectares	$1,368,804	0.000	$0	0.000	$0	
	Suburban	Hectares	$479,081	0.000	$0	0.000	$0	
	Undeveloped	Hectares	$342,201	0.000	$0	0.000	$0	
3	Right-of-Way Required for Maintenance and Storage Facility				$0		$0	
Environmental Mitigation								
	Environmental Mitigation (3% of Line Cost)				$19,489,818		$44,978,713	
System Elements								
1	Signaling (ATC)	km	$845,654	0.000	$0	0.000	$0	
2	Signaling (CTC with cab signals)(per track km)	km	$115,625	0.000	$0	231.740	$26,794,938	
3	Signaling (CTC) single track	km	$93,750	115.870	$10,862,813	0.000	$0	
4	Signaling (CTC) double track	km	$178,125	0.000	$0	0.000	$0	

Appendix
REGIONAL RAIL ALTERNATIVES 1 2 UNIT COSTS

	COST ELEMENTS	UNIT	UNIT PRICE (YR NOV-2006)	SACRAMENTO TO RICHMOND				NOTES
				Alternative 1		Alternative 2		
Alignment Cost				Quantities	Item Cost	Quantities	Item Cost	
5	Communications (w/Fiber Optic Backbone)	km	$699,413	0.000	$0	0.000	$0	
6	Wayside Protection System	km	$67,144	0.000	$0	0.000	$0	
Electrification Items								
1	Traction Power Supply	km	$432,365		$0	115.870	$50,098,083	
2	Traction Power Distribution	km	$806,233		$0	115.870	$93,418,190	
Program Implementation Costs (Design, CM & Agency Cost)								
	Program Implementation Costs (25.5% Total Constr. & Procurement Cost)				$169,453,473		$353,489,838	
Contingencies								
	Contingencies (25% of Total Construction Cost)				$166,130,856		$345,058,665	
Total Construction					$664,523,424		$1,386,234,660	
Total Construction and ROW (Incl. Envir. Mitgtn)					$684,013,243		$1,687,785,428	
Grand Total					**$1,019,597,572**		**$2,386,333,931**	

Appendix
REGIONAL RAIL ALTERNATIVES 1 2 UNIT COSTS

	COST ELEMENTS	UNIT	UNIT PRICE (YR NOV-2006)	RICHMOND TO OAKLAND				NOTES
				Alternative 1		Alternative 2		
Alignment Cost				Quantities	Item Cost	Quantities	Item Cost	
Track Items								
1	Double Track Section - At-Grade	km	$993,167	22.531	$22,377,042	22.531	$22,377,042	
2	Double Track Section - On Structure	km	$1,878,243	0.000	$0	0.000	$0	
3	Double Track Section - In Tunnel or Subway	km	$1,878,243	0.000	$0	0.000	$0	
4	Double Track Section - In Trench	km	$1,878,243	0.000	$0	0.000	$0	
5	Single Track Section - At Grade	km	$496,583	0.000	$0	0.000	$0	
6	Single Track Section - On Structure	km	$939,121	0.000	$0	0.000	$0	
7	Single Track Sections - In Tunnel or Subway	km	$939,121	0.000	$0	0.000	$0	
8	Single Track Section - In Trench	km	$939,121	0.000	$0	0.000	$0	
9	Freight Double Track - At-Grade	km	$993,167	0.000	$0	0.000	$0	
10	Freight Single Track - At-Grade	km	$496,583	0.000	$0	0.000	$0	
11	Four-track construction or reconstruction	km	$1,887,657	0.000	$0	0.000	$0	
12	Crossovers	ea	$1,000,000	4.000	$4,000,000	4.000	$4,000,000	
Earthwork Items								
1	Site Preparation - Undeveloped	Hectares	$12,081	55.260	$667,587	55.260	$667,587	
2	Total Cut	m3	$9	0.000	$0	0.000	$0	
3	Total Fill	m3	$9	0.000	$0	0.000	$0	
4	Borrow	m3	$13	0.000	$0	0.000	$0	
5	Spoil	m3	$0	0.000	$0	0.000	$0	
4	Landscape/Erosion Control	Hectares	$8,075	0.000	$0	0.000	$0	
5	Security Fencing (Both Sides of R/W)	km	$101,733	22.531	$2,292,143	22.531	$2,292,143	
6	Special Drain. Facilities (5% of Earthwork Cost)				$147,986		$147,986	
Structures, Tunnels, Walls								
1	Standard Structure	km	$13,733,933	0.000	$0	0.000	$0	
2	High Structure	km	$16,480,720	0.000	$0	0.000	$0	
3	Long Span Structure	km	$37,577,568	0.000	$0	0.000	$0	
4	Waterway Crossing - Primary	km	$28,876,734	0.000	$0	0.000	$0	
5	Waterway Crossing - Secondary (Irrig./Canal Crossing)	km	$23,119,226	0.000	$0	0.000	$0	
6	Twin Single Track Drill & Blast (<6 Miles)	km	$75,040,254	0.000	$0	0.000	$0	
7	Twin Single Track TBM (<6 Miles)	km	$55,464,535	0.000	$0	0.000	$0	
8	Twin Single Track TBM w/3rd Tube (>6 Miles)	km	$78,846,643	0.000	$0	0.000	$0	
9	Double Track Drill & Blast	km	$83,740,573	0.000	$0	0.000	$0	
10	Double Track Mined (Soft Soil)	km	$96,247,282	0.000	$0	0.000	$0	
11	Seismic Chamber (Drill & Blast/Mined)	ea	$94,803,899	0.000	$0	0.000	$0	
12	Cut & Cover Double Track Tunnel	km	$48,123,641	0.000	$0	0.000	$0	
13	Trench Short	km	$49,668,587	0.000	$0	0.000	$0	
14	Trench Long	km	$39,272,836	0.000	$0	0.000	$0	
15	Mechanical & Electrical for Tunnels	km	$1,931,362	0.000	$0	0.000	$0	
16	Retaining Walls	km	$4,399,945	0.000	$0	0.000	$0	
17	Containment Walls	km	$1,500,559	0.000	$0	22.531	$33,809,104	
18	Single Track Cut and Cover Subway	km	$30,077,276	0.000	$0	0.000	$0	
Grade Separations								
1	Street Overcrossing RR - (Urban)	ea	$17,167,417	4.000	$68,669,667	4.000	$68,669,667	
2	Street Overcrossing RR - (Suburban)	ea	$6,485,469	0.000	$0	0.000	$0	
3	Street Overcrossing RR - (Undeveloped)	ea	$1,093,628	0.000	$0	0.000	$0	
4	Street Undercrossing RR - (Urban)	ea	$17,930,413	8.000	$143,443,305	8.000	$143,443,305	
5	Street Undercrossing RR - (Suburban)	ea	$6,866,967	0.000	$0	0.000	$0	
6	Street Undercrossing RR - (Undeveloped)	ea	$1,157,211	0.000	$0	0.000	$0	
7	Minor crossing closures	ea	$178,032	6.000	$1,068,195	6.000	$1,068,195	
Stations, Including Parking								
1	Terminal	LS	$106,346,890	0.000	$0	0.000	$0	
2	Site Development/Parking (Terminal Station)	LS	$26,586,722	0.000	$0	0.000	$0	
3	Urban	LS	$53,173,445	2.000	$106,346,890	2.000	$106,346,890	Richmond, Oakland
4	Site Development/Parking (Urban Station)	LS	$13,293,361	2.000	$26,586,722	2.000	$26,586,722	
5	Suburban	LS	$26,586,722	2.000	$53,173,445	2.000	$53,173,445	Emeryville, Berkeley
6	Site Development/Parking (Suburban Station)	LS	$6,646,681	2.000	$13,293,361	2.000	$13,293,361	
7	Rural	LS	$13,293,361	0.000	$0	0.000	$0	
8	Site Development/Parking (Rural Station)	LS	$2,658,672	0.000	$0	0.000	$0	
9	Parking - Structure	space	$15,886	0.000	$0	0.000	$0	
10	Parking - At Grade	space	$2,277	0.000	$0	0.000	$0	
Yards and Shops								
1		km	$0	0.000	$0	0.000	$0	
2		km	$0	0.000	$0	0.000	$0	
3		km	$0	0.000	$0	0.000	$0	
4		km	$0	0.000	$0	0.000	$0	
Rail and Utility Relocation								
1	Single Track Relocation (Temporary)	km	$1,271,661	0.000	$0	0.000	$0	
2	Single Track Relocation (Permanent)	km	$1,271,661	0.000	$0	0.000	$0	
3	Single Track Removal	km	$63,372	0.000	$0	0.000	$0	
4	Major Utility Relocations - Dense Urban	km	$890,162	22.531	$20,056,248	22.531	$20,056,248	
5	Major Utility Relocations - Urban	km	$680,338	0.000	$0	0.000	$0	
6	Major Utility Relocations - Dense Suburban	km	$476,873	0.000	$0	0.000	$0	
7	Major Utility Relocations - Suburban	km	$273,407	0.000	$0	0.000	$0	
8	Major Utility Relocations - Undeveloped	km	$13,988	0.000	$0	0.000	$0	
Right of Way Items								
1	Right-of-Way Required for Each Segment				$0		$47,000,961	
	Dense Urban	Hectares	$4,106,412	0.000	$0	0.000	$0	
	Urban	Hectares	$2,737,608	0.000	$0	0.000	$0	
	Dense Suburban	Hectares	$1,368,804	0.000	$0	34.337	$47,000,961	50" wide strip
	Suburban	Hectares	$479,081	0.000	$0	0.000	$0	
	Undeveloped	Hectares	$342,201	0.000	$0	0.000	$0	
2	Right-of-Way Required for Passenger Station & Parking Facilities				$0		$6,646,913	

Appendix
REGIONAL RAIL ALTERNATIVES 1 2 UNIT COSTS

	COST ELEMENTS	UNIT	UNIT PRICE (YR NOV-2006)	RICHMOND TO OAKLAND				NOTES
				Alternative 1		Alternative 2		
Alignment Cost				Quantities	Item Cost	Quantities	Item Cost	
	Dense Urban	Hectares	$4,106,412	0.000	$0	0.000	$0	
	Urban	Hectares	$2,737,608	0.000	$0	0.000	$0	
	Dense Suburban	Hectares	$1,368,804	0.000	$0	4.856	$6,646,913	
	Suburban	Hectares	$479,081	0.000	$0	0.000	$0	
	Undeveloped	Hectares	$342,201	0.000	$0	0.000	$0	
3	Right-of-Way Required for Maintenance and Storage Facility				$0		$0	
Environmental Mitigation								
	Environmental Mitigation (3% of Line Cost)				$13,863,678		$16,487,387	
System Elements								
1	Signaling (ATC)	km	$845,654	0.000	$0	0.000	$0	
2	Signaling (CTC with cab signals)(per track km)	km	$115,625	0.000	$0	45.062	$5,210,294	
3	Signaling (CTC) single track	km	$93,750	0.000	$0	0.000	$0	
4	Signaling (CTC) double track	km	$178,125	22.531	$4,013,334	0.000	$0	
5	Communications (w/Fiber Optic Backbone)	km	$699,413	0.000	$0	0.000	$0	
6	Wayside Protection System	km	$67,144	0.000	$0	0.000	$0	
Electrification Items								
1	Traction Power Supply	km	$432,365	0.000	$0	22.531	$9,741,606	
2	Traction Power Distribution	km	$806,233	0.000	$0	22.531	$18,165,230	
Program Implementation Costs (Design, CM & Agency Cost)								
	Program Implementation Costs (25.5% Total Constr. & Procurement Cost)				$118,864,661		$134,907,450	
Contingencies								
	Contingencies (25% of Total Construction Cost)				$116,533,981		$132,262,206	
Total Construction					$466,135,926		$529,048,825	
Total Construction and ROW (Incl. Envir. Mitgtn)					$479,999,603		$599,184,086	
Grand Total					$715,398,246		$866,353,743	

Appendix
REGIONAL RAIL ALTERNATIVES 1 2 UNIT COSTS

COST ELEMENTS		UNIT	UNIT PRICE (YR NOV-2006)	STOCKTON TO RICHMOND				NOTES
				Alt. 1 - Stock. to Martinez		Alt. 2 - Stock. to Richmd		
Alignment Cost				Quantities	Item Cost	Quantities	Item Cost	
Track Items								
5	Single Track Section - At Grade	km	$496,583	119.090	$59,138,120	119.090	$59,138,120	
Structures, Tunnels, Walls								
1	Standard Structure	km	$13,733,933	0.000	$0	0.000	$0	
2	High Structure	km	$16,480,720	0.000	$0	0.000	$0	
3	Long Span Structure	km	$37,577,568	0.000	$0	0.000	$0	
4	Waterway Crossing - Primary	km	$28,876,734	0.000	$0	0.000	$0	
5	Waterway Crossing - Secondary (Irrig./Canal Crossing)	km	$23,119,226	0.000	$0	0.000	$0	
6	Twin Single Track Drill & Blast (<6 Miles)	km	$75,040,254	0.000	$0	0.000	$0	
7	Twin Single Track TBM (<6 Miles)	km	$55,464,535	0.000	$0	0.000	$0	
8	Twin Single Track TBM w/3rd Tube (>6 Miles)	km	$78,846,643	0.000	$0	0.000	$0	
9	Double Track Drill & Blast	km	$83,740,573	0.000	$0	0.000	$0	
10	Double Track Mined (Soft Soil)	km	$96,247,282	0.000	$0	0.000	$0	
11	Seismic Chamber (Drill & Blast/Mined)	ea	$94,803,899	0.000	$0	0.000	$0	
12	Crossovers	ea	$94,803,899	0.000	$0	0.000	$0	
13	Cut & Cover Double Track Tunnel	km	$48,123,641	0.000	$0	0.000	$0	
14	Trench Short	km	$49,668,587	0.000	$0	0.000	$0	
15	Trench Long	km	$39,272,836	0.000	$0	0.000	$0	
16	Mechanical & Electrical for Tunnels	km	$1,931,362	0.000	$0	0.000	$0	
17	Retaining Walls	km	$4,399,945	0.000	$0	0.000	$0	
18	Containment Walls	km	$1,500,559	0.000	$0	0.000	$0	
19	Single Track Cut and Cover Subway	km	$30,077,276	0.000	$0	0.000	$0	
Grade Separations								
1	Street Overcrossing RR - (Urban)	ea	$17,167,417	0.000	$0	0.000	$0	
2	Street Overcrossing RR - (Suburban)	ea	$6,485,469	0.000	$0	0.000	$0	
3	Street Overcrossing RR - (Undeveloped)	ea	$1,093,628	0.000	$0	0.000	$0	
4	Street Undercrossing RR - (Urban)	ea	$17,930,413	6.000	$107,582,479	6.000	$107,582,479	
5	Street Undercrossing RR - (Suburban)	ea	$6,866,967	0.000	$0	0.000	$0	
6	Street Undercrossing RR - (Undeveloped)	ea	$1,157,211	0.000	$0	0.000	$0	
7	Minor crossing closures	ea	$178,032	0.000	$0	0.000	$0	
Stations, Including Parking								
1	Terminal	LS	$106,346,890	0.000	$0	0.000	$0	
2	Site Development/Parking (Terminal Station)	LS	$26,586,722	0.000	$0	0.000	$0	
3	Urban	LS	$53,173,445	0.000	$0	0.000	$0	
4	Site Development/Parking (Urban Station)	LS	$13,293,361	0.000	$0	0.000	$0	
5	Suburban	LS	$26,586,722	1.000	$26,586,722	1.000	$26,586,722	
6	Site Development/Parking (Suburban Station)	LS	$6,646,681	1.000	$6,646,681	1.000	$6,646,681	
7	Rural	LS	$13,293,361	0.000	$0	0.000	$0	
8	Site Development/Parking (Rural Station)	LS	$2,658,672	0.000	$0	0.000	$0	
9	Parking - Structure	space	$15,886	0.000	$0	0.000	$0	
10	Parking - At Grade	space	$2,277	0.000	$0	0.000	$0	
Yards and Shops								
1		km	$0	0.000	$0	0.000	$0	
2		km	$0	0.000	$0	0.000	$0	
3		km	$0	0.000	$0	0.000	$0	
4		km	$0	0.000	$0	0.000	$0	
Rail and Utility Relocation								
1	Single Track Relocation (Temporary)	km	$1,271,661	0.000	$0	0.000	$0	
2	Single Track Relocation (Permanent)	km	$1,271,661	0.000	$0	0.000	$0	
3	Single Track Removal	km	$63,372	0.000	$0	0.000	$0	
4	Major Utility Relocations - Dense Urban	km	$890,162	0.000	$0	0.000	$0	
5	Major Utility Relocations - Urban	km	$680,338	0.000	$0	0.000	$0	
6	Major Utility Relocations - Dense Suburban	km	$476,873	0.000	$0	0.000	$0	
7	Major Utility Relocations - Suburban	km	$273,407	0.000	$0	0.000	$0	
8	Major Utility Relocations - Undeveloped	km	$13,988	119.090	$1,665,863	119.090	$1,665,863	
Right of Way Items								
1	Right-of-Way Required for Each Segment				$0		$0	
	Dense Urban	Hectares	$4,106,412	0.000	$0	0.000	$0	
	Urban	Hectares	$2,737,608	0.000	$0	0.000	$0	
	Dense Suburban	Hectares	$1,368,804	0.000	$0	0.000	$0	
	Suburban	Hectares	$479,081	0.000	$0	0.000	$0	
	Undeveloped	Hectares	$342,201	0.000	$0	0.000	$0	
2	Right-of-Way Required for Passenger Station & Parking Facilities				$581,629		$581,629	
	Dense Urban	Hectares	$4,106,412	0.000	$0	0.000	$0	
	Urban	Hectares	$2,737,608	0.000	$0	0.000	$0	
	Dense Suburban	Hectares	$1,368,804	0.000	$0	0.000	$0	
	Suburban	Hectares	$479,081	1.214	$581,629	1.214	$581,629	
	Undeveloped	Hectares	$342,201	0.000	$0	0.000	$0	
3	Right-of-Way Required for Maintenance and Storage Facility				$0		$0	
Environmental Mitigation								
	Environmental Mitigation (3% of Line Cost)				$6,066,045		$6,066,045	
System Elements								
1	Signaling (ATC)	km	$845,654	0.000	$0	0.000	$0	
2	Signaling (CTC with cab signals)(per track km)	km	$115,625	0.000	$0	0.000	$0	
3	Signaling (CTC) single track	km	$93,750	0.000	$0	0.000	$0	
4	Signaling (CTC) double track	km	$178,125	119.090	$21,212,906	119.090	$21,212,906	
5	Communications (w/Fiber Optic Backbone)	km	$699,413	0.000	$0	0.000	$0	
6	Wayside Protection System	km	$67,144	0.000	$0	0.000	$0	
Electrification Items								
1	Traction Power Supply	km	$432,365	0.000	$0	0.000	$0	
2	Traction Power Distribution	km	$806,233	0.000	$0	0.000	$0	

Appendix
REGIONAL RAIL ALTERNATIVES 1 2 UNIT COSTS

COST ELEMENTS	UNIT	UNIT PRICE (YR NOV-2006)	STOCKTON TO RICHMOND				NOTES
			Alt. 1 - Stock. to Martinez		Alt. 2 - Stock. to Richmd		
Alignment Cost			**Quantities**	**Item Cost**	**Quantities**	**Item Cost**	
Program Implementation Costs (Design, CM & Agency Cost)							
Program Implementation Costs (25.5% Total Constr. & Procurement Cost)				$56,822,357		$56,822,357	
Contingencies							
Contingencies (25% of Total Construction Cost)				$55,708,193		$55,708,193	
Total Construction				$222,832,771		$222,832,771	
Total Construction and ROW (Incl. Envir. Mitgtn)				$229,480,444		$229,480,444	
Grand Total				$342,010,994		$342,010,994	

	COST ELEMENTS	UNIT	UNIT PRICE (YR NOV-2006)	Tracy to Pittsburg				NOTES
				Alternative 1		Alternative 2		
Alignment Cost				Quantities	Item Cost	Quantities	Item Cost	
Track Items								
	Double Track Section - Total	km		0.00		58.95		
1	Double Track Section - At-Grade	km	$993,167	0.000	$0	58.950	$58,547,186	
2	Double Track Section - On Structure	km	$1,878,243	0.000	$0	0.000	$0	
3	Double Track Section - In Tunnel or Subway	km	$1,878,243	0.000	$0	0.000	$0	
4	Double Track Section - In Trench	km	$1,878,243	0.000	$0	0.000	$0	
	Single Track Section - Total	km		58.950		0.000		
5	Single Track Section - At Grade	km	$496,583	58.950	$29,273,593	0.000	$0	
6	Single Track Section - On Structure	km	$939,121	0.000	$0	0.000	$0	
7	Single Track Sections - In Tunnel or Subway	km	$939,121	0.000	$0	0.000	$0	
8	Single Track Section - In Trench	km	$939,121	0.000	$0	0.000	$0	
9	Freight Double Track - At-Grade	km	$993,167	0.000	$0	0.000	$0	
10	Freight Single Track - At-Grade	km	$496,583	0.000	$0	0.000	$0	
Earthwork Items								
1	Site Preparation - Undeveloped	Hectares	$12,081	0.000	$0	0.000	$0	
2	Total Cut	m3	$9	0.000	$0	0.000	$0	
3	Total Fill	m3	$9	0.000	$0	0.000	$0	
4	Borrow	m3	$13	0.000	$0	0.000	$0	
5	Spoil	m3	$0	0.000	$0	0.000	$0	
6	Landscape/Erosion Control	Hectares	$8,075	0.000	$0	0.000	$0	
7	Security Fencing (Both Sides of R/W)	km	$101,733	56.450	$5,742,819	56.450	$5,742,819	
8	Special Drain. Facilities (5% of Earthwork Cost)				$287,141		$287,141	
Structures, Tunnels, Walls								
1	Standard Structure	km	$13,733,933	0.650	$8,927,057	1.950	$26,781,170	
2	High Structure	km	$16,480,720	0.000	$0	0.000	$0	
3	Long Span Structure	km	$37,577,568	0.000	$0	0.000	$0	
4	Waterway Crossing - Primary	km	$28,876,734	0.000	$0	0.000	$0	
5	Waterway Crossing - Secondary (Irrig./Canal Crossing)	km	$23,119,226	0.290	$6,704,575	0.290	$6,704,575	
6	Twin Single Track Drill & Blast (<6 Miles)	km	$75,040,254	0.000	$0	0.000	$0	
7	Twin Single Track TBM (<6 Miles)	km	$55,464,535	0.000	$0	0.000	$0	
8	Twin Single Track TBM w/3rd Tube (>6 Miles)	km	$78,846,643	0.000	$0	0.000	$0	
9	Double Track Drill & Blast	km	$83,740,573	0.000	$0	0.000	$0	
10	Double Track Mined (Soft Soil)	km	$96,247,282	0.000	$0	0.000	$0	
11	Seismic Chamber (Drill & Blast/Mined)	ea	$94,803,899	0.000	$0	0.000	$0	
12	Crossovers	ea	$94,803,899	0.000	$0	0.000	$0	
13	Cut & Cover Double Track Tunnel	km	$48,123,641	0.000	$0	0.000	$0	
14	Trench Short	km	$49,668,587	0.000	$0	0.000	$0	
15	Trench Long	km	$39,272,836	0.000	$0	0.000	$0	
16	Mechanical & Electrical for Tunnels	km	$1,931,362	0.000	$0	0.000	$0	
17	Retaining Walls	km	$4,399,945	0.000	$0	0.000	$0	
18	Containment Walls	km	$1,500,559	0.000	$0	0.000	$0	
19	Single Track Cut and Cover Subway	km	$30,077,276	0.000	$0	0.000	$0	
Grade Separations								
1	Street Overcrossing HSR - (Urban)	ea	$17,167,417	0.000	$0	0.000	$0	
2	Street Overcrossing HSR - (Suburban)	ea	$6,485,469	0.000	$0	0.000	$0	
3	Street Overcrossing HSR - (Undeveloped)	ea	$1,093,628	0.000	$0	0.000	$0	
4	Street Undercrossing HSR - (Urban)	ea	$17,930,413	0.000	$0	0.000	$0	
5	Street Undercrossing HSR - (Suburban)	ea	$6,866,967	1.000	$6,866,967	1.000	$6,866,967	
6	Street Undercrossing HSR - (Undeveloped)	ea	$1,157,211	0.000	$0	0.000	$0	
7	Street Bridging HSR Trench	ea		0.000	$0	0.000	$0	
8	Minor crossing closures	ea	$178,032	0.000	$0	0.000	$0	
9	Grade crossing	ea	$250,000	30.000	$7,500,000	26.000	$6,500,000	
Building Items								
1	Terminal	LS	$111,906,124	0.000	$0	0.000	$0	
2	Site Development/Parking (Terminal Station)	LS	$27,976,531	0.000	$0	0.000	$0	
3	Urban	LS	$55,953,062	0.000	$0	0.000	$0	
4	Site Development/Parking (Urban Station)	LS	$13,988,266	0.000	$0	0.000	$0	
5	Suburban	LS	$27,976,531	0.000	$0	0.000	$0	
6	Site Development/Parking (Suburban Station)	LS	$6,994,133	0.000	$0	0.000	$0	
7	Rural	LS	$13,988,266	0.000	$0	0.000	$0	
8	Site Development/Parking (Rural Station)	LS	$2,797,653	0.000	$0	0.000	$0	
9	Parking - Structure	space	$16,716	0.000	$0	0.000	$0	
10	Parking - At Grade	space	$2,396	0.000	$0	0.000	$0	
Stations, Including Parking								
1	Terminal	LS	$106,346,890	0.000	$0	0.000	$0	
2	Site Development/Parking (Terminal Station)	LS	$26,586,722	0.000	$0	0.000	$0	
3	Urban	LS	$53,173,445	0.000	$0	0.000	$0	
4	Site Development/Parking (Urban Station)	LS	$13,293,361	0.000	$0	0.000	$0	
5	Suburban	LS	$26,586,722	8.000	$212,693,779	8.000	$212,693,779	
6	Site Development/Parking (Suburban Station)	LS	$6,646,681	8.000	$53,173,445	8.000	$53,173,445	
7	Rural	LS	$13,293,361	0.000	$0	0.000	$0	
8	Site Development/Parking (Rural Station)	LS	$2,658,672	0.000	$0	0.000	$0	
9	Parking - Structure	space	$15,886	0.000	$0	0.000	$0	
10	Parking - At Grade	space	$2,277	0.000	$0	0.000	$0	
Yards and Shops								
1		km	$0	0.000	$0	0.000	$0	
2		km	$0	0.000	$0	0.000	$0	
3		km	$0	0.000	$0	0.000	$0	
4		km	$0	0.000	$0	0.000	$0	
Rail and Utility Relocation								
1	Single Track Relocation (Temporary)	km	$1,271,661	0.000	$0	0.000	$0	
2	Single Track Relocation (Permanent)	km	$1,271,661	0.000	$0	0.000	$0	
3	Single Track Removal	km	$63,372	55.200	$3,498,162	55.200	$3,498,162	
4	Major Utility Relocations - Dense Urban	km	$890,162	0.000	$0	0.000	$0	
5	Major Utility Relocations - Urban	km	$680,338	0.000	$0	0.000	$0	
6	Major Utility Relocations - Dense Suburban	km	$476,873	0.000	$0	0.000	$0	
7	Major Utility Relocations - Suburban	km	$273,407	0.000	$0	0.000	$0	
8	Major Utility Relocations - Undeveloped	km	$13,988	0.000	$0	0.000	$0	
Right of Way Items								
1	Right-of-Way Required for Each Segment							
	Dense Urban	Hectares	$4,106,412	0.000	$0	0.000	$0	
	Urban	Hectares	$2,737,608	0.000	$0	0.000	$0	
	Dense Suburban	Hectares	$1,368,804	9.000	$12,319,237	89.899	$123,053,779	
	Suburban	Hectares	$479,081	0.000	$0	0.000	$0	
	Undeveloped	Hectares	$342,201	0.000	$0	0.000	$0	
2	Right-of-Way Required for Passenger Station & Parking Facilities			0.000		0.000		

	Dense Urban	Hectares	$4,106,412	0.000	$0	0.000	$0	
	Urban	Hectares	$2,737,608	0.000	$0	0.000	$0	
	Dense Suburban	Hectares	$1,368,804	0.000	$0	0.000	$0	
	Suburban	Hectares	$479,081	4.856	$2,326,530	0.000	$0	
	Undeveloped	Hectares	$342,201	0.000	$0	0.000	$0	
3	Right-of-Way Required for Maintenance and Storage Facility			0.000		0.000		
Environmental Mitigation								
	Environmental Mitigation (3% of Line Cost)				$10,205,823		$13,386,884	
System Elements								
1	Signaling (CTC) single track	km	$93,750	58.950	$5,526,563	0.000	$0	
2	Signaling (CTC) double track	km	$178,125	0.000	$0	58.950	$10,500,469	
3	Communications (w/Fiber Optic Backbone)	km		0.000	0.000		1,135,415	
4	Wayside Protection System	km		0.000	0.000	0.000	0	
Electrification Items								
1	Traction Power Supply	km	$807,783	0.000	0.000	58.950	47,618,808	
2	Traction Power Distribution	LS		0.000	0.000	0.000	16,680,000	
Program Implementation Costs (PER SCREENI								
	Program Implementation Costs (25.5% Total Constr. & Procurement Cost)				$92,493,386		$151,258,503	
Contingencies (PER SCREENING)								
	Contingencies (25% of Total Construction Cost)				$90,679,790		$148,292,650	
Total Construction					$340,194,100		$446,229,466	
Total Construction and ROW (Incl. Envir. Mitgtn)					$362,719,160		$593,170,598	
Grand Total					**$545,892,336**		**$892,721,751**	

	COST ELEMENTS	UNIT	UNIT PRICE (YR NOV-2006)	Sacramento to Merced				NOTES
				Alternative 1		Alternative 2		
	Alignment Cost			Quantities	Item Cost	Quantities	Item Cost	
	Track Items							
	Double Track Section - Total	**km**		**182.80**		**182.80**		
1	Double Track Section - At-Grade	km	$993,167	173.200	$172,016,499	173.200	$172,016,499	
2	Double Track Section - On Structure	km	$1,878,243	9.600	$18,031,129	9.600	$18,031,129	
3	Double Track Section - In Tunnel or Subway	km	$1,878,243	0.000	$0	0.000	$0	
4	Double Track Section - In Trench	km	$1,878,243	0.000	$0	0.000	$0	
	Single Track Section - Total	**km**		**0.000**		**182.800**		
5	Single Track Section - At Grade	km	$496,583	0.000	$0	173.200	$86,008,250	
6	Single Track Section - On Structure	km	$939,121	0.000	$0	9.600	$9,015,564	
7	Single Track Sections - In Tunnel or Subway	km	$939,121	0.000	$0	0.000	$0	
8	Single Track Section - In Trench	km	$939,121	0.000	$0	0.000	$0	
9	Freight Double Track - At-Grade	km	$993,167	0.000	$0	0.000	$0	
10	Freight Single Track - At-Grade	km	$496,583	0.000	$0	0.000	$0	
	Earthwork Items							
1	Site Preparation - Undeveloped	Hectares	$12,081	0.000	$0	0.000	$0	
2	Total Cut	m3	$9	1,262,396.000	$11,237,374	1,893,594.000	$16,856,061	
3	Total Fill	m3	$9	915,859.000	$8,152,632	1,373,789.000	$12,228,952	
4	Borrow	m3	$13	0.000	$0	0.000	$0	
5	Spoil	m3	$0	0.000	$0	0.000	$0	
6	Landscape/Erosion Control	Hectares	$8,075	0.000	$0	0.000	$0	
7	Security Fencing (Both Sides of R/W)	km	$101,733	169.850	$17,279,323	169.850	$17,279,323	
8	Special Drain. Facilities (5% of Earthwork Cost)				$1,833,466		$2,318,217	
	Structures, Tunnels, Walls							
1	Standard Structure	km	$13,733,933	7.800	$107,124,681	7.800	$107,124,681	
2	High Structure	km	$16,480,720	5.100	$84,051,673	5.100	$84,051,673	
3	Long Span Structure	km	$37,577,568	0.000	$0	0.000	$0	
4	Waterway Crossing - Primary	km	$28,876,734	0.350	$10,106,857	0.350	$10,106,857	
5	Waterway Crossing - Secondary (Irrig./Canal Crossing)	km	$23,119,226	2.220	$51,324,681	2.220	$51,324,681	
6	Twin Single Track Drill & Blast (<6 Miles)	km	$75,040,254	0.000	$0	0.000	$0	
7	Twin Single Track TBM (<6 Miles)	km	$55,464,535	0.000	$0	0.000	$0	
8	Twin Single Track TBM w/3rd Tube (>6 Miles)	km	$78,846,643	0.000	$0	0.000	$0	
9	Double Track Drill & Blast	km	$83,740,573	0.000	$0	0.000	$0	
10	Double Track Mined (Soft Soil)	km	$96,247,282	0.000	$0	0.000	$0	
11	Seismic Chamber (Drill & Blast/Mined)	ea	$94,803,899	0.000	$0	0.000	$0	
12	Crossovers	ea	$94,803,899	0.000	$0	0.000	$0	
13	Cut & Cover Double Track Tunnel	km	$48,123,641	0.000	$0	0.000	$0	
14	Trench Short	km	$49,668,587	0.000	$0	0.000	$0	
15	Trench Long	km	$39,272,836	0.000	$0	0.000	$0	
16	Mechanical & Electrical for Tunnels	km	$1,931,362	0.000	$0	0.000	$0	
17	Retaining Walls	km	$4,399,945	6.900	$30,359,623	6.900	$30,359,623	
18	Containment Walls	km	$1,500,559	0.000	$0	0.000	$0	
19	Single Track Cut and Cover Subway	km	$30,077,276	0.000	$0	0.000	$0	
	Grade Separations							
1	Street Overcrossing HSR - (Urban)	ea	$17,167,417	38.000	$652,361,839	38.000	$652,361,839	
2	Street Overcrossing HSR - (Suburban)	ea	$6,485,469	28.000	$181,593,120	28.000	$181,593,120	
3	Street Overcrossing HSR - (Undeveloped)	ea	$1,093,628	22.000	$24,059,817	22.000	$24,059,817	
4	Street Undercrossing HSR - (Urban)	ea	$17,930,413	5.000	$89,652,066	5.000	$89,652,066	
5	Street Undercrossing HSR - (Suburban)	ea	$6,866,967	2.000	$13,733,933	2.000	$13,733,933	
6	Street Undercrossing HSR - (Undeveloped)	ea	$1,157,211	2.000	$2,314,422	2.000	$2,314,422	
7	Street Bridging HSR Trench	ea		0.000	$0	0.000	$0	
8	Minor crossing closures	ea	$178,032	8.000	$1,424,260	8.000	$1,424,260	
9	Grade crossing	ea	$250,000	0.000	$0	0.000	$0	
	Stations, Including Parking							
1	Terminal	LS	$106,346,890	0.000	$0	0.000	$0	
2	Site Development/Parking (Terminal Station)	LS	$26,586,722	0.000	$0	0.000	$0	
3	Urban	LS	$53,173,445	0.000	$0	0.000	$0	
4	Site Development/Parking (Urban Station)	LS	$13,293,361	0.000	$0	0.000	$0	
5	Suburban	LS	$26,586,722	8.000	$212,693,779	8.000	$212,693,779	
6	Site Development/Parking (Suburban Station)	LS	$6,646,681	8.000	$53,173,445	8.000	$53,173,445	
7	Rural	LS	$13,293,361	0.000	$0	0.000	$0	
8	Site Development/Parking (Rural Station)	LS	$2,658,672	0.000	$0	0.000	$0	
9	Parking - Structure	space	$15,886	0.000	$0	0.000	$0	
10	Parking - At Grade	space	$2,277	0.000	$0	0.000	$0	
	Yards and Shops							
1		km	$0	0.000	$0	0.000	$0	
2		km	$0	0.000	$0	0.000	$0	
3		km	$0	0.000	$0	0.000	$0	
4		km	$0	0.000	$0	0.000	$0	
	Rail and Utility Relocation							
1	Single Track Relocation (Temporary)	km	$1,271,661	0.000	$0	0.000	$0	
2	Single Track Relocation (Permanent)	km	$1,271,661	0.000	$0	182.800	$232,459,540	
3	Single Track Removal	km	$63,372	0.000	$0	0.000	$0	
4	Major Utility Relocations - Dense Urban	km	$890,162	0.000	$0	0.000	$0	
5	Major Utility Relocations - Urban	km	$680,338	38.414	$26,134,518	38.414	$26,134,518	
6	Major Utility Relocations - Dense Suburban	km	$476,873	0.000	$0	0.000	$0	
7	Major Utility Relocations - Suburban	km	$273,407	6.059	$1,656,573	6.059	$1,656,573	
8	Major Utility Relocations - Undeveloped	km	$13,988	48.923	$684,348	48.923	$684,348	
	Right of Way Items							
1	Right-of-Way Required for Each Segment			0.000		0.000		
	Dense Urban	Hectares	$4,106,412	0.000	$0	0.000	$0	
	Urban	Hectares	$2,737,608	0.000	$0	278.587	$762,662,613	Assumed purchasing 50' (0.01524km) wide ROW strip
	Dense Suburban	Hectares	$1,368,804	0.000	$0	0.000	$0	
	Suburban	Hectares	$479,081	0.000	$0	0.000	$0	
	Undeveloped	Hectares	$342,201	0.000	$0	0.000	$0	
2	Right-of-Way Required for Passenger Station & Parking Facilities			0.000	$1,478,313,967	0.000	$1,815,977,079	
	Dense Urban	Hectares	$4,106,412	0.000	$1,770,315,709	0.000	$2,107,978,821	
	Urban	Hectares	$2,737,608	58.384	$1,770,315,709	58.384	$2,107,978,821	
	Dense Suburban	Hectares	$1,368,804	0.000		0.000		
	Suburban	Hectares	$479,081	9.209		9.209		
	Undeveloped	Hectares	$342,201	74.273		74.273		
3	Right-of-Way Required for Maintenance and Storage Facility			0.000		0.000		
	Environmental Mitigation							
	Environmental Mitigation (3% of Line Cost)				$54,106,839		$70,052,363	
	System Elements							
1	Signaling (ATC)	km	$845,654	0.000	$0	0.000	$0	
2	Signaling (CTC with cab signals)(per track km)	km	$115,625	0.000	$0	548.400	$63,408,750	
3	Signaling (CTC) single track	km	$93,750	0.000	$0	0.000	$0	
4	Signaling (CTC) double track	km	$178,125	182.800	$32,561,250	0.000	$0	
5	Communications (w/Fiber Optic Backbone)	km	$699,413	0.000	$0	0.000	$0	
6	Wayside Protection System	km	$67,144	0.000	$0	0.000	$0	
	Electrification Items							
1	Traction Power Supply	km	$432,365	0.000	0.000	182.800	79,036,244	
2	Traction Power Distribution	km	$806,233	0.000	0.000	182.800	147,379,349	
	Program Implementation Costs (PER SCREENI							

Program Implementation Costs (25.5% Total Constr. & Procurement Cost)		$459,908,133		$823,956,634	
Contingencies (PER SCREENING)					
Contingencies (25% of Total Construction Cost)		$464,417,037		$807,800,622	
Total Construction		$1,803,561,307		$2,335,078,761	
Total Construction and ROW (Incl. Envir. Mitgtn)		$1,857,668,147		$3,231,202,488	
Grand Total		**$2,781,993,317**		**$4,862,959,744**	

	COST ELEMENTS	UNIT	UNIT PRICE	QUANTITIES		QUANTITIES	
	Alignment Cost			**Redwood Jct. to Newark Alt 1**		**Redwood Jct. to Newark Alt 2**	
Track				**Quantities**	**Item Cost**	**Quantities**	**Item Cost**
	Double Track Section-Total	km		0.00		17.24	
1	Double Track Section - At Grade	km	$993,167	0.00	$0	14.80	$14,698,869
2	Double Track Section - On Structure	km	$1,878,243	0.00	$0	2.44	$4,582,912
3	Double Track Section - In Tunnel or Subway	km	$1,878,243	0.00	$0	0.00	$0
4	Double Track Section - In Trench	km	$1,878,243	0.00	$0	0.00	$0
	Single Track Section - Total	km		20.71		3.47	
5	Single Track Section - At Grade	km	$496,583	18.27	$9,072,579	3.47	$1,723,144
6	Single Track Section - On Structure	km	$939,121	2.44	$2,291,456	0.00	$0
7	Single Track Section - In Tunnel or Subway	km	$939,121	0.00	$0	0.00	$0
8	Single Track Section - In Trench	km	$939,121	0.00	$0	0.00	$0
9	Freight Double Track - At Grade	km	$993,167	0.00	$0	0.00	$0
10	Freight Single Track - At Grade	km	$496,583	0.00	$0	0.00	$0
Earthwork and Related Items							
1	Site Preparation - Undeveloped	hectare	$12,081	0.00	$0	0.00	$0
2	Cut	m3	$9	0.00	$0	0.00	$0
3	Fill	m3	$9	0.00	$0	0.00	$0
4	Borrow	m3	$13.35	0.00	$0	0.00	$0
5	Spoil	m3	$0.00	0.00	$0	0.00	$0
6	Cut/Fill Slopes (Landscaping/Erosion Control)	hectare	$8,075	0.00	$0	0.00	$0
7	Fencing (Both Sides of R/W)	km	$101,733	0.00	$0	0.00	$0
8	Special Drainage Facilities	5% of Earthwork			$0		$0
Structures/Tunnels/Walls							
1	Standard Structure	km	$13,733,933	0.00	$0	0.00	$0
2	High Structure	km	$16,480,720	0.00	$0	0.00	$0
3	Long Span Structure	km	$37,577,568	0.00	$0	0.00	$0
4	Waterway Crossing - Primary	km	$28,876,734	2.44	$70,459,232	4.88	$140,918,463
5	Waterway Crossing - Secondary (Irrigation/Canal Crossing)	km	$23,119,226	0.00	$0	0.00	$0
6	Twin Single Track Drill & Blast (<6 Miles)	km	$75,040,254	0.00	$0	0.00	$0
7	Twin Single Track TBM (<6 Miles)	km	$55,464,535	0.00	$0	0.00	$0
8	Twin Single Track TBM w/3rd Tube (>6 Miles)	km	$78,846,643	0.00	$0	0.00	$0
9	Double Track Drill & Blast	km	$83,740,573	0.00	$0	0.00	$0
10	Double Track Mined (Soft Soil)	km	$96,247,282	0.00	$0	0.00	$0
11	Seismic Chamber (Drill & Blast/Mined)	ea	$94,803,899	0.00	$0	0.00	$0
12	Crossovers	ea	$94,803,899	0.00	$0	0.00	$0
13	Cut & Cover Double Track Tunnel	km	$48,123,641	0.00	$0	0.00	$0
14	Trench Short	km	$49,668,587	0.00	$0	0.00	$0
15	Trench Long	km	$39,272,836	0.00	$0	0.00	$0
16	Mechanical & Electrical for Tunnels	km	$1,931,362	0.00	$0	0.00	$0
17	Retaining Walls	km	$4,399,945	0.00	$0	0.00	$0
18	Containment Walls	km	$1,500,559	0.00	$0	0.00	$0
19	Single Track Cut and Cover Subway	km	$30,077,276	0.00	$0	0.00	$0
Grade Separations							
1	Sreet Overcrossing HSR - Urban	EA	$17,167,417	0.00	$0	0.00	$0
	Street Overcrossing HSR - (Urban; 4-Track Section) (Caltrain Segments Only)	EA	$0	0.00	$0	0.00	$0
	Street Overcrossing HSR - (Urban; Existing Grade Crossing) (Oakland-San Jose, San Jose - Gilroy, Altamont, BNSF N/S, UPRR N/S)	EA	$0	0.00	$0	0.00	$0
2	Sreet Overcrossing HSR - Suburban	EA	$6,485,469	0.00	$0	0.00	$0
3	Sreet Overcrossing HSR - Undeveloped	EA	$1,093,628	0.00	$0	0.00	$0
4	Sreet Undercrossing HSR - Urban	EA	$17,930,413	1.00	$17,930,413	8.00	$143,443,305
	Street Undercrossing HSR - (Urban; 4-Track Section) (Caltrain Segments Only)	EA	$0	0.00	$0	0.00	$0
	Street Undercrossing HSR - (Urban; Existing Grade Crossing) (Oakland-San Jose, San Jose - Gilroy, Altamont, BNSF N/S, UPRR N/S)	EA	$0	0.00	$0	0.00	$0
5	Sreet Undercrossing HSR - Suburban	EA	$6,866,967	0.00	$0	3.00	$20,600,900
6	Sreet Undercrossing HSR - Undeveloped	EA	$1,157,211	0.00	$0	0.00	$0
7	Street Bridging HSR Trench	EA		0.00	$0	0.00	$0
8	Minor crossing closure	EA	$178,032	0.00	$0	0.00	$0
9	Grade crossing	EA	$250,000	9.00	$2,250,000	0.00	$0
Stations, Including Parking							
1	Terminal	LS	$106,346,890	0.00	$0	0.00	$0
2	Site Development/Parking (Terminal Station)	LS	$26,586,722	0.00	$0	0.00	$0
3	Urban	LS	$53,173,445	1.00	$53,173,445	1.00	$53,173,445
4	Site Development/Parking (Urban Station)	LS	$13,293,361	1.00	$13,293,361	1.00	$13,293,361
5	Suburban	LS	$26,586,722	1.00	$26,586,722	1.00	$26,586,722
6	Site Development/Parking (Suburban Station)	LS	$6,646,681	1.00	$6,646,681	1.00	$6,646,681
7	Rural	LS	$13,293,361	0.00	$0	0.00	$0
8	Site Development/Parking (Rural Station)	LS	$2,658,672	0.00	$0	0.00	$0
9	Parking - Structure	space	$15,886	0.00	$0	0.00	$0
10	Parking - At Grade	space	$2,277	0.00	$0	0.00	$0
Yards and Shops							
1		km	$0	0.00	$0	0.00	$0
2		km	$0	0.00	$0	0.00	$0
3		km	$0	0.00	$0	0.00	$0
4		km	$0	0.00	$0	0.00	$0
Rail and Utility Relocation							
1	Single Track Relocation (temporary)	km	$1,271,661	0.00	$0	0.00	$0
2	Single Track Relocation (permanent)	km	$1,271,661	0.00	$0	0.00	$0
3	Single Track Removal	km	$63,372	0.00	$0	0.00	$0
4	Major Utility Relocation - Dense Urban	km	$890,162	0.00	$0	0.00	$0
5	Major Utility Relocation - Urban	km	$680,338	0.00	$0	0.00	$0
6	Major Utility Relocation - Dense Suburban	km	$476,873	0.00	$0	0.00	$0

	COST ELEMENTS	UNIT	UNIT PRICE	QUANTITIES		QUANTITIES	
	Alignment Cost			**Redwood Jct. to Newark Alt 1**		**Redwood Jct. to Newark Alt 2**	
7	Major Utility Relocation - Suburban	km	$273,407	0.00	$0	0.00	$0
8	Major Utility Relocation - Undeveloped	km	$13,988	0.00	$0	0.00	$0
Right-of-Way							
1	Right-of-Way Required for Each Segment				$0		$0
	Dense Urban	hectare	$4,106,412	0.00	$0	0.00	$0
	Urban	hectare	$2,737,608	0.00	$0	0.00	$0
	Dense Suburban	hectare	$1,368,804	0.00	$0	0.00	$0
	Suburban	hectare	$479,081	0.00	$0	0.00	$0
	Undeveloped	hectare	$342,201	0.00	$0	0.00	$0
2	Right-of-Way Required for Passenger Station & Parking Facilities				$3,905,245		$3,905,245
	Dense Urban	hectare	$4,106,412	0.000	$0	0.000	$0
	Urban	hectare	$2,737,608	1.214	$3,323,612	1.214	$3,323,612
	Dense Suburban	hectare	$1,368,804	0.000	$0	0.000	$0
	Suburban	hectare	$479,081	1.214	$581,632	1.214	$581,632
	Undeveloped	hectare	$342,201	0.000	$0	0.000	$0
3	Right-of-Way Required for Maintenance and Storage Facility						
Environmental Mitigation							
	Environmental Mitigation (3% of Line Cost)				$6,285,431.34		$13,004,348.77
System Elements							
1	Signaling (CTC) single track	km	$93,750	20.71	$1,941,563	0.00	$0
2	Signaling (CTC with cab signals)(per track km)	km	$115,625	0.00	$0	41.42	$4,789,188
3	Signaling (CTC) double track	km	$178,125	0.00	$0	0.00	$0
Electrification Items							
1	Traction Power Supply	km	$432,365	0.00	$0	20.71	$8,954,270
2	Traction Power Distribution	km	$806,233	0.00	$0	20.71	$16,697,080
Vehicle Costs							
1	Fleet size estimate	Trainset			$0		$0
Support Facility Costs							
1	Facility cost breakdown	EA			$0		$0
Program Implementation Costs (PER SCREENING)							
	Program Implementation Costs (25.5% Total Constr. & Procurement Cost)				$51,929,590		$116,307,627
Contingencies (PER SCREENING)							
	Contingencies (25% of Total Construction Cost)				$50,911,363		$114,027,085
Total Construction					$203,645,451		$456,108,342
Total Construction and Right of Way (Includes Environmental Mitigation)					$213,836,127		$473,017,935
Grand Total					$316,677,080		$703,352,647

	COST ELEMENTS	UNIT	UNIT PRICE (YR NOV-2006)	NEWARK TO NILES JUNCTION				NOTES
				Alternative 1		Alternative 2		
Alignment Cost				Quantities	Item Cost	Quantities	Item Cost	
Track Items								
	Double Track Section - Total	km		0.67		9.60		
1	Double Track Section - At-Grade	km	$993,167	0.670	$665,422	6.600	$6,554,901	
2	Double Track Section - On Structure	km	$1,878,243	0.000	$0	0.000	$0	
3	Double Track Section - In Tunnel or Subway	km	$1,878,243	0.000	$0	1.000	$1,878,243	
4	Double Track Section - In Trench	km	$1,878,243	0.000	$0	2.000	$3,756,485	
	Single Track Section - Total	km		9.130		3.000		
5	Single Track Section - At Grade	km	$496,583	7.630	$3,788,932	0.000	$0	
6	Single Track Section - On Structure	km	$939,121	0.000	$0	0.000	$0	
7	Single Track Sections - In Tunnel or Subway	km	$939,121	0.000	$0	1.000	$939,121	
8	Single Track Section - In Trench	km	$939,121	1.500	$1,408,682	2.000	$1,878,243	
9	Freight Double Track - At-Grade	km	$993,167	0.000	$0	0.000	$0	
10	Freight Single Track - At-Grade	km	$496,583	0.000	$0	0.000	$0	
Earthwork Items								
1	Site Preparation - Undeveloped	Hectares	$12,081	0.000	$0	0.000	$0	
2	Total Cut	m3	$9	281,466.000	$2,505,504	562,932.000	$5,011,009	
3	Total Fill	m3	$9	0.000	$0	0.000	$0	
4	Borrow	m3	$13	0.000	$0	0.000	$0	
5	Spoil	m3	$0	0.000	$0	0.000	$0	
6	Landscape/Erosion Control	Hectares	$8,075	0.000	$0	0.000	$0	
7	Security Fencing (Both Sides of R/W)	km	$101,733	9.800	$996,982	8.600	$874,902	
8	Special Drain. Facilities (5% of Earthwork Cost)			0.000	$175,124	0.000	$294,296	
Structures, Tunnels, Walls								
1	Standard Structure	km	$13,733,933	0.000	$0	0.000	$0	
2	High Structure	km	$16,480,720	0.000	$0	0.000	$0	
3	Long Span Structure	km	$37,577,568	0.000	$0	0.000	$0	
4	Waterway Crossing - Primary	km	$28,876,734	0.000	$0	0.000	$0	
5	Waterway Crossing - Secondary (Irrig./Canal Crossing)	km	$23,119,226	0.000	$0	0.000	$0	
6	Twin Single Track Drill & Blast (<6 Miles)	km	$75,040,254	0.000	$0	0.000	$0	
7	Twin Single Track TBM (<6 Miles)	km	$55,464,535	0.000	$0	0.000	$0	
8	Twin Single Track TBM w/3rd Tube (>6 Miles)	km	$78,846,643	0.000	$0	0.000	$0	
9	Double Track Drill & Blast	km	$83,740,573	0.000	$0	0.000	$0	
10	Double Track Mined (Soft Soil)	km	$96,247,282	0.000	$0	0.000	$0	
11	Seismic Chamber (Drill & Blast/Mined)	ea	$94,803,899	0.000	$0	0.000	$0	
12	Crossovers	ea	$94,803,899	0.000	$0	0.000	$0	
13	Cut & Cover Double Track Tunnel	km	$48,123,641	0.000	$0	1.000	$48,123,641	
14	Trench Short	km	$49,668,587	1.500	$74,502,880	2.000	$99,337,174	
15	Trench Long	km	$39,272,836	0.000	$0	0.000	$0	
16	Mechanical & Electrical for Tunnels	km	$1,931,362	0.000	$0	1.000	$1,931,362	
17	Retaining Walls	km	$4,399,945	0.000	$0	0.000	$0	
18	Containment Walls	km	$1,500,559	0.000	$0	0.000	$0	
19	Single Track Cut and Cover Subway	km	$30,077,276	0.000	$0	0.000	$0	
Grade Separations								
1	Street Overcrossing HSR - (Urban)	ea	$17,167,417	1.000	$17,167,417	1.000	$17,167,417	
2	Street Overcrossing HSR - (Suburban)	ea	$6,485,469	5.000	$32,427,343	4.000	$25,941,874	
3	Street Overcrossing HSR - (Undeveloped)	ea	$1,093,628	0.000	$0	0.000	$0	
4	Street Undercrossing HSR - (Urban)	ea	$17,930,413	0.000	$0	0.000	$0	
5	Street Undercrossing HSR - (Suburban)	ea	$6,866,967	2.000	$13,733,933	2.000	$13,733,933	
6	Street Undercrossing HSR - (Undeveloped)	ea	$1,157,211	0.000	$0	0.000	$0	
7	Street Bridging HSR Trench	ea		0.000	$0	0.000	$0	
8	Minor crossing closures	ea	$178,032	5.000	$890,162	4.000	$712,130	
9	Grade crossing	ea	$250,000	0.000	$0	0.000	$0	
Stations, Including Parking								
1	Terminal	LS	$106,346,890	0.000	$0	0.000	$0	
2	Site Development/Parking (Terminal Station)	LS	$26,586,722	0.000	$0	0.000	$0	
3	Urban	LS	$53,173,445	1.000	$53,173,445	1.000	$53,173,445	
4	Site Development/Parking (Urban Station)	LS	$13,293,361	1.000	$13,293,361	1.000	$13,293,361	
5	Suburban	LS	$26,586,722	1.000	$26,586,722	1.000	$26,586,722	
6	Site Development/Parking (Suburban Station)	LS	$6,646,681	1.000	$6,646,681	1.000	$6,646,681	
7	Rural	LS	$13,293,361	0.000	$0	0.000	$0	
8	Site Development/Parking (Rural Station)	LS	$2,658,672	0.000	$0	0.000	$0	
9	Parking - Structure	space	$15,886	0.000	$0	0.000	$0	
10	Parking - At Grade	space	$2,277	0.000	$0	0.000	$0	
Yards and Shops								
1		km	$0	0.000	$0	0.000	$0	
2		km	$0	0.000	$0	0.000	$0	
3		km	$0	0.000	$0	0.000	$0	
4		km	$0	0.000	$0	0.000	$0	
Rail and Utility Relocation								
1	Single Track Relocation (Temporary)	km	$1,271,661	0.000	$0	0.000	$0	
2	Single Track Relocation (Permanent)	km	$1,271,661	18.260	$23,220,521	0.000	$0	
3	Single Track Removal	km	$63,372	0.000	$0	0.000	$0	
4	Major Utility Relocations - Dense Urban	km	$890,162	0.000	$0	0.000	$0	
5	Major Utility Relocations - Urban	km	$680,338	0.450	$306,152	0.450	$306,152	
6	Major Utility Relocations - Dense Suburban	km	$476,873	0.000	$0	0.000	$0	
7	Major Utility Relocations - Suburban	km	$273,407	1.755	$479,829	1.755	$479,829	
8	Major Utility Relocations - Undeveloped	km	$13,988	0.000	$0	0.000	$0	
Right of Way Items								
1	Right-of-Way Required for Each Segment							
	Dense Urban	Hectares	$4,106,412	0.000	$0	0.000	$0	
	Urban	Hectares	$2,737,608	1.021	$2,795,317	1.021	$2,795,317	
	Dense Suburban	Hectares	$1,368,804	0.000	$0	0.000	$0	
	Suburban	Hectares	$479,081	13.914	$6,665,995	13.914	$6,665,995	
	Undeveloped	Hectares	$342,201	0.000	$0	0.000	$0	
2	Right-of-Way Required for Passenger Station & Parking Facilities			0.000	$0	0.000	$0	
	Dense Urban	Hectares	$4,106,412	0.000	$0	0.000	$0	
	Urban	Hectares	$2,737,608	0.000	$0	0.000	$0	
	Dense Suburban	Hectares	$1,368,804	0.000	$0	0.000	$0	
	Suburban	Hectares	$479,081	2.428	$1,163,264.12	0.000	$1,163,264.12	
	Undeveloped	Hectares	$342,201	0.000	$0	0.000	$0	
3	Right-of-Way Required for Maintenance and Storage Facility			0.000		0.000		
Environmental Mitigation								
	Environmental Mitigation (3% of Line Cost)				$8,211,442		$10,292,350	
System Elements								
1	Signaling (CTC with cab signals)(per track km)	km	$115,625	0.000	$0	22.200	$2,566,875	
2	Signaling (CTC) single track	km	$93,750	0.000	$0	0.000	$0	
3	Signaling (CTC) double track	km	$178,125	9.800	$1,745,625	0.000	$0	

Electrification Items								
1	Traction Power Supply	km	$432,365	0.000	$0	9.600	$4,150,700	
2	Traction Power Distribution	km	$806,233	0.000	$0	9.600	$7,739,834	
Program Implementation Costs (PER SCREENING)								
Program Implementation Costs (25.5% Total Constr. & Procurement Cost)					$69,797,253		$92,522,158	
Contingencies (PER SCREENING)								
Contingencies (25% of Total Construction Cost)					$68,428,680		$90,707,998	
Total Construction					$273,714,718		$343,078,331	
Total Construction and ROW (Incl. Envir. Mitgtn)					$291,387,472		$362,831,993	
Grand Total					**$429,613,405**		**$546,062,150**	

	COST ELEMENTS	UNIT	UNIT PRICE (YR NOV-2006)	NILES JUNCTION TO PLEASANTON				NOTES
				Alternative 1		Alternative 2		
	Alignment Cost			Quantities	Item Cost	Quantities	Item Cost	
	Track Items							
	Double Track Section - Total	km		0.00		3.05		
1	Double Track Section - At-Grade	km	$993,167	0.000	$0	0.000	$0	
2	Double Track Section - On Structure	km	$1,878,243	0.000	$0	2.600	$4,883,431	
3	Double Track Section - In Tunnel or Subway	km	$1,878,243	0.000	$0	0.000	$0	
4	Double Track Section - In Trench	km	$1,878,243	0.000	$0	0.450	$845,209	
	Single Track Section - Total	km		18.600		31.200		
5	Single Track Section - At Grade	km	$496,583	18.300	$9,087,477	18.600	$9,236,452	
6	Single Track Section - On Structure	km	$939,121	0.300	$281,736	0.000	$0	
7	Single Track Sections - In Tunnel or Subway	km	$939,121	0.000	$0	12.600	$11,832,928	
8	Single Track Section - In Trench	km	$939,121	0.000	$0	0.000	$0	
9	Freight Double Track - At-Grade	km	$993,167	0.000	$0	0.000	$0	
10	Freight Single Track - At-Grade	km	$496,583	0.000	$0	0.000	$0	
	Earthwork Items							
1	Site Preparation - Undeveloped	Hectares	$12,081	0.000	$0	0.000	$0	
2	Total Cut	m3	$9	0.000	$0	1,610,009.000	$14,331,694	
3	Total Fill	m3	$9	0.000	$0	0.000	$0	
4	Borrow	m3	$13	0.000	$0	0.000	$0	
5	Spoil	m3	$0	0.000	$0	0.000	$0	
6	Landscape/Erosion Control	Hectares	$8,075	0.000	$0	0.000	$0	
7	Security Fencing (Both Sides of R/W)	km	$101,733	0.000	$0	15.450	$1,571,772	
8	Special Drain. Facilities (5% of Earthwork Cost)				$0		$795,173	
	Structures, Tunnels, Walls							
1	Standard Structure	km	$13,733,933	0.000	$0	0.000	$0	
2	High Structure	km	$16,480,720	0.000	$0	5.450	$89,819,925	
3	Long Span Structure	km	$37,577,568	0.000	$0	0.000	$0	
4	Waterway Crossing - Primary	km	$28,876,734	0.200	$5,775,347	0.200	$5,775,347	
5	Waterway Crossing - Secondary (Irrig./Canal Crossing)	km	$23,119,226	0.100	$2,311,923	0.100	$2,311,923	
6	Twin Single Track Drill & Blast (<6 Miles)	km	$75,040,254	0.000	$0	0.000	$0	
7	Twin Single Track TBM (<6 Miles)	km	$55,464,535	0.000	$0	5.050	$280,095,903	
8	Twin Single Track TBM w/3rd Tube (>6 Miles)	km	$78,846,643	0.000	$0	0.000	$0	
9	Double Track Drill & Blast	km	$83,740,573	0.000	$0	0.000	$0	
10	Double Track Mined (Soft Soil)	km	$96,247,282	0.000	$0	1.250	$120,309,102	
11	Seismic Chamber (Drill & Blast/Mined)	ea	$94,803,899	0.000	$0	0.000	$0	
12	Crossovers	ea	$94,803,899	0.000	$0	0.000	$0	
13	Cut & Cover Double Track Tunnel	km	$48,123,641	0.000	$0	0.000	$0	
14	Trench Short	km	$49,668,587	0.000	$0	0.450	$22,350,864	
15	Trench Long	km	$39,272,836	0.000	$0	0.000	$0	
16	Mechanical & Electrical for Tunnels	km	$1,931,362	0.000	$0	6.300	$12,167,581	
17	Retaining Walls	km	$4,399,945	0.450	$1,979,975	0.450	$1,979,975	
18	Containment Walls	km	$1,500,559	0.000	$0	0.000	$0	
19	Single Track Cut and Cover Subway	km	$30,077,276	0.000	$0	0.000	$0	
	Grade Separations							
1	Street Overcrossing HSR - (Urban)	ea	$17,167,417	0.000	$0	0.000	$0	
2	Street Overcrossing HSR - (Suburban)	ea	$6,485,469	0.000	$0	2.000	$12,970,937	
3	Street Overcrossing HSR - (Undeveloped)	ea	$1,093,628	0.000	$0	1.000	$1,093,628	
4	Street Undercrossing HSR - (Urban)	ea	$17,930,413	0.000	$0	0.000	$0	
5	Street Undercrossing HSR - (Suburban)	ea	$6,866,967	5.000	$34,334,834	5.000	$34,334,834	
6	Street Undercrossing HSR - (Undeveloped)	ea	$1,157,211	0.000	$0	2.000	$2,314,422	
7	Street Bridging HSR Trench	ea		0.000	$0	0.000	$0	
8	Minor crossing closures	ea	$178,032	1.000	$178,032	1.000	$178,032	
9	Grade crossing	ea	$250,000	7.000	$1,750,000	2.000	$500,000	
	Stations, Including Parking							
1	Terminal	LS	$106,346,890	0.000	$0	0.000	$0	
2	Site Development/Parking (Terminal Station)	LS	$26,586,722	0.000	$0	0.000	$0	
3	Urban	LS	$53,173,445	0.000	$0	0.000	$0	
4	Site Development/Parking (Urban Station)	LS	$13,293,361	0.000	$0	0.000	$0	
5	Suburban	LS	$26,586,722	0.000	$0	0.000	$0	
6	Site Development/Parking (Suburban Station)	LS	$6,646,681	0.000	$0	0.000	$0	
7	Rural	LS	$13,293,361	0.000	$0	0.000	$0	
8	Site Development/Parking (Rural Station)	LS	$2,658,672	0.000	$0	0.000	$0	
9	Parking - Structure	space	$15,886	0.000	$0	0.000	$0	
10	Parking - At Grade	space	$2,277	0.000	$0	0.000	$0	
	Yards and Shops							
1		km	$0	0.000	$0	0.000	$0	
2		km	$0	0.000	$0	0.000	$0	
3		km	$0	0.000	$0	0.000	$0	
4		km	$0	0.000	$0	0.000	$0	
	Rail and Utility Relocation							
1	Single Track Relocation (Temporary)	km	$1,271,661	0.000	$0	0.000	$0	
2	Single Track Relocation (Permanent)	km	$1,271,661	0.000	$0	0.000	$0	
3	Single Track Removal	km	$63,372	11.350	$719,278	11.350	$719,278	
4	Major Utility Relocations - Dense Urban	km	$890,162	0.000	$0	0.000	$0	
5	Major Utility Relocations - Urban	km	$680,338	0.668	$454,466	0.668	$454,466	
6	Major Utility Relocations - Dense Suburban	km	$476,873	0.000	$0	0.000	$0	
7	Major Utility Relocations - Suburban	km	$273,407	0.500	$136,704	0.500	$136,704	
8	Major Utility Relocations - Undeveloped	km	$13,988	0.000	$0	7.422	$103,821	
	Right of Way Items							
1	Right-of-Way Required for Each Segment							
	Dense Urban	Hectares	$4,106,412	0.000	$0	0.000	$0	
	Urban	Hectares	$2,737,608	0.000	$0	7.961	$21,794,099	
	Dense Suburban	Hectares	$1,368,804	0.000	$0	0.000	$0	
	Suburban	Hectares	$479,081	0.765	$366,497	0.765	$366,497	
	Undeveloped	Hectares	$342,201	0.000	$0	4.715	$1,613,478	
	Environmental Mitigation							
	Environmental Mitigation (3% of Line Cost)				$1,820,682		$19,753,924	
	System Elements							
1	Signaling (CTC with cab signals)(per track km)	km	$115,625	0.000	$0	37.300	$4,312,813	
2	Signaling (CTC) single track	km	$93,750	0.000	$0	0.000	$0	
3	Signaling (CTC) double track	km	$178,125	18.600	$3,313,125	0.000	$0	
	Electrification Items							
1	Traction Power Supply	km	$432,365	0.000	$0	18.600	$8,041,981	
2	Traction Power Distribution	km	$806,233	0.000	$0	18.600	$14,995,929	
	Program Implementation Costs (PER SCREENI							
	Program Implementation Costs (25.5% Total Constr. & Procurement Cost)				$15,382,339		$167,908,352	
	Contingencies (PER SCREENING)							
	Contingencies (25% of Total Construction Cost)				$15,080,724		$164,616,031	
	Total Construction				$60,322,896		$658,464,124	
	Total Construction and ROW (Incl. Envir. Mitgtn)				$62,510,075		$701,992,122	
	Grand Total				**$92,973,138**		**$1,034,516,504**	

	COST ELEMENTS	UNIT	UNIT PRICE (YR NOV-2006)	PLEASANTON TO LIVERMORE				NOTES
				Alternative 1		Alternative 2		
	Alignment Cost			**Quantities**	**Item Cost**	**Quantities**	**Item Cost**	
	Track Items							
	Double Track Section - Total	km		9.20		9.20		
1	Double Track Section - At-Grade	km	$993,167	0.000	$0	0.000	$0	
2	Double Track Section - On Structure	km	$1,878,243	9.204	$17,287,345	9.204	$17,287,345	
3	Double Track Section - In Tunnel or Subway	km	$1,878,243	0.000	$0	0.000	$0	
4	Double Track Section - In Trench	km	$1,878,243	0.000	$0	0.000	$0	
	Single Track Section - Total	km		0.000		9.204		
5	Single Track Section - At Grade	km	$496,583	0.000	$0	0.000	$0	
6	Single Track Section - On Structure	km	$939,121	0.000	$0	9.204	$8,643,672	
7	Single Track Sections - In Tunnel or Subway	km	$939,121	0.000	$0	0.000	$0	
8	Single Track Section - In Trench	km	$939,121	0.000	$0	0.000	$0	
9	Freight Double Track - At-Grade	km	$993,167	0.000	$0	0.000	$0	
10	Freight Single Track - At-Grade	km	$496,583	0.000	$0	0.000	$0	
	Earthwork Items							
1	Site Preparation - Undeveloped	Hectares	$12,081	0.000	$0	0.000	$0	
2	Total Cut	m3	$9	0.000	$0	0.000	$0	
3	Total Fill	m3	$9	0.000	$0	0.000	$0	
4	Borrow	m3	$13	0.000	$0	0.000	$0	
5	Spoil	m3	$0	0.000	$0	0.000	$0	
6	Landscape/Erosion Control	Hectares	$8,075	0.000	$0	0.000	$0	
7	Security Fencing (Both Sides of R/W)	km	$101,733	0.000	$0	0.000	$0	
8	Special Drain. Facilities (5% of Earthwork Cost)			0.000	$0	0.000	$0	
	Structures, Tunnels, Walls							
1	Standard Structure	km	$13,733,933	0.000	$0	1.150	$15,794,023	
2	High Structure	km	$16,480,720	0.000	$0	8.104	$133,559,756	
3	Long Span Structure	km	$37,577,568	0.000	$0	0.000	$0	
4	Waterway Crossing - Primary	km	$28,876,734	0.070	$2,021,371	0.000	$0	
5	Waterway Crossing - Secondary (Irrig./Canal Crossin	km	$23,119,226	0.000	$0	0.000	$0	
6	Twin Single Track Drill & Blast (<6 Miles)	km	$75,040,254	0.000	$0	0.000	$0	
7	Twin Single Track TBM (<6 Miles)	km	$55,464,535	0.000	$0	0.000	$0	
8	Twin Single Track TBM w/3rd Tube (>6 Miles)	km	$78,846,643	0.000	$0	0.000	$0	
9	Double Track Drill & Blast	km	$83,740,573	0.000	$0	0.000	$0	
10	Double Track Mined (Soft Soil)	km	$96,247,282	0.000	$0	0.000	$0	
11	Seismic Chamber (Drill & Blast/Mined)	ea	$94,803,899	0.000	$0	0.000	$0	
12	Crossovers	ea	$94,803,899	0.000	$0	0.000	$0	
13	Cut & Cover Double Track Tunnel	km	$48,123,641	0.000	$0	0.000	$0	
14	Trench Short	km	$49,668,587	0.000	$0	0.000	$0	
15	Trench Long	km	$39,272,836	0.000	$0	0.000	$0	
16	Mechanical & Electrical for Tunnels	km	$1,931,362	0.000	$0	0.000	$0	
17	Retaining Walls	km	$4,399,945	0.000	$0	0.000	$0	
18	Containment Walls	km	$1,500,559	0.000	$0	9.204	$13,811,149	
19	Single Track Cut and Cover Subway	km	$30,077,276	0.000	$0	0.000	$0	
	Grade Separations							
1	Street Overcrossing HSR - (Urban)	ea	$17,167,417	0.000	$0	0.000	$0	
2	Street Overcrossing HSR - (Suburban)	ea	$6,485,469	4.000	$25,941,874	4.000	$25,941,874	
3	Street Overcrossing HSR - (Undeveloped)	ea	$1,093,628	0.000	$0	0.000	$0	
4	Street Undercrossing HSR - (Urban)	ea	$17,930,413	0.000	$0	0.000	$0	
5	Street Undercrossing HSR - (Suburban)	ea	$6,866,967	4.000	$27,467,867	4.000	$27,467,867	
6	Street Undercrossing HSR - (Undeveloped)	ea	$1,157,211	0.000	$0	0.000	$0	
7	Street Bridging HSR Trench	ea		0.000	$0	0.000	$0	
8	Minor crossing closures	ea	$178,032	3.000	$534,097	3.000	$534,097	
9	Grade crossing	ea	$250,000	0.000	$0	0.000	$0	
	Stations, Including Parking							
1	Terminal	LS	$106,346,890	0.000	$0	0.000	$0	
2	Site Development/Parking (Terminal Station)	LS	$26,586,722	0.000	$0	0.000	$0	
3	Urban	LS	$53,173,445	0.000	$0	0.000	$0	
4	Site Development/Parking (Urban Station)	LS	$13,293,361	0.000	$0	0.000	$0	
5	Suburban	LS	$26,586,722	2.000	$53,173,445	3.000	$79,760,167	
6	Site Development/Parking (Suburban Station)	LS	$6,646,681	2.000	$13,293,361	3.000	$19,940,042	
7	Rural	LS	$13,293,361	0.000	$0	0.000	$0	
8	Site Development/Parking (Rural Station)	LS	$2,658,672	0.000	$0	0.000	$0	
9	Parking - Structure	space	$15,886	0.000	$0	0.000	$0	
10	Parking - At Grade	space	$2,277	0.000	$0	0.000	$0	
	Yards and Shops							
1		km	$0	0.000	$0	0.000	$0	
2		km	$0	0.000	$0	0.000	$0	
3		km	$0	0.000	$0	0.000	$0	
4		km	$0	0.000	$0	0.000	$0	
	Rail and Utility Relocation							
1	Single Track Relocation (Temporary)	km	$1,271,661	0.000	$0	0.000	$0	
2	Single Track Relocation (Permanent)	km	$1,271,661	2.594	$3,298,687	9.204	$11,704,363	
3	Single Track Removal	km	$63,372	0.000	$0	0.000	$0	
4	Major Utility Relocations - Dense Urban	km	$890,162	0.000	$0	0.000	$0	
5	Major Utility Relocations - Urban	km	$680,338	1.116	$759,394	1.116	$759,394	
6	Major Utility Relocations - Dense Suburban	km	$476,873	0.000	$0	0.000	$0	
7	Major Utility Relocations - Suburban	km	$273,407	3.077	$841,273	3.077	$841,273	
8	Major Utility Relocations - Undeveloped	km	$13,988	5.006	$70,029	5.006	$70,029	
	Right of Way Items							
1	Right-of-Way Required for Each Segment			0.000		0.000		
	Dense Urban	Hectares	$4,106,412	0.000	$0	0.000	$0	
	Urban	Hectares	$2,737,608	1.701	$4,656,672	1.701	$4,656,672	
	Dense Suburban	Hectares	$1,368,804	0.000	$0	0.000	$0	
	Suburban	Hectares	$479,081	4.689	$2,246,412	4.689	$2,246,412	
	Undeveloped	Hectares	$342,201	7.630	$2,610,993	7.630	$2,610,993	
2	Right-of-Way Required for Passenger Station & Parking Facilities			0.000	$3,323,612	0.000	$4,985,419	
	Dense Urban	Hectares	$4,106,412	0.000	$0	0.000		
	Urban	Hectares	$2,737,608	0.000	$0	0.000		
	Dense Suburban	Hectares	$1,368,804	2.428	$3,323,612.44	3.642	$4,985,418.66	
	Suburban	Hectares	$479,081	0.000		0.000		
	Undeveloped	Hectares	$342,201	0.000		0.000		
3	Right-of-Way Required for Maintenance and			0.000		0.000		
	Environmental Mitigation							
	Environmental Mitigation (3% of Line Cost)				$4,415,700		$11,152,954	
	System Elements							
1	Signaling (CTC with cab signals)(per track km)	km	$115,625	0.000	$0	36.800	$4,255,000	
2	Signaling (CTC) single track	km	$93,750	9.200	$862,500	0.000	$0	
3	Signaling (CTC) double track	km	$178,125	9.200	$1,638,750	0.000	$0	
	Electrification Items							
1	Traction Power Supply	km	$432,365	0.000	$0	9.200	$3,977,754	
2	Traction Power Distribution	km	$806,233	0.000	$0	9.200	$7,417,341	
	Program Implementation Costs (PER SCREENI							
	Program Implementation Costs (25.5% Total Constr. & Procurement Cost)				$37,533,449		$94,800,113	
	Contingencies (PER SCREENING)							
	Contingencies (25% of Total Construction Cost)				$36,797,499		$92,941,287	
	Total Construction				$147,189,994		$371,765,148	
	Total Construction and ROW (Incl. Envir. Mitgtn)				$161,119,771		$392,432,179	
	Grand Total				**$235,450,718**		**$580,173,579**	

	COST ELEMENTS	UNIT	UNIT PRICE (YR NOV-2006)	Livermore to Tracy - SUMMARY				NOTES
				Alternative 1		Alternative 2		
Alignment Cost				Quantities	Item Cost	Quantities	Item Cost	
Track Items								
	Double Track Section - Total	km		2.00		33.35		
1	Double Track Section - At-Grade	km	$993,167	0.000	$0	23.999	$23,835,011	
2	Double Track Section - On Structure	km	$1,878,243	2.000	$3,756,485	9.350	$17,561,568	
3	Double Track Section - In Tunnel or Subway	km	$1,878,243	0.000	$0	0.000	$0	
4	Double Track Section - In Trench	km	$1,878,243	0.000	$0	0.000	$0	
	Single Track Section - Total	km		33.630		0.000		
5	Single Track Section - At Grade	km	$496,583	29.200	$14,500,236	0.000	$0	
6	Single Track Section - On Structure	km	$939,121	4.430	$4,160,307	0.000	$0	
7	Single Track Sections - In Tunnel or Subway	km	$939,121	0.000	$0	0.000	$0	
8	Single Track Section - In Trench	km	$939,121	0.000	$0	0.000	$0	
9	Freight Double Track - At-Grade	km	$993,167	0.000	$0	0.000	$0	
10	Freight Single Track - At-Grade	km	$496,583	0.000	$0	0.000	$0	
Earthwork Items								
1	Site Preparation - Undeveloped	Hectares	$12,081	0.000	$0	0.000	$0	
2	Total Cut	m3	$9	6,660.000	$59,285	23,589,130.000	$209,981,555	
3	Total Fill	m3	$9	0.000	$0	6,705,730.000	$59,691,884	
4	Borrow	m3	$13	0.000	$0	0.000	$0	
5	Spoil	m3	$0	0.000	$0	0.000	$0	
6	Landscape/Erosion Control	Hectares	$8,075	0.000	$0	0.000	$0	
7	Security Fencing (Both Sides of R/W)	km	$101,733	1.800	$183,119	4.650	$473,058	
8	Special Drain. Facilities (5% of Earthwork Cost)			0.000	$12,120	0.000	$13,507,325	
Structures, Tunnels, Walls								
1	Standard Structure	km	$13,733,933	0.000	$0	3.330	$45,733,998	
2	High Structure	km	$16,480,720	0.000	$0	5.470	$90,149,539	
3	Long Span Structure	km	$37,577,568	0.000	$0	0.000	$0	
4	Waterway Crossing - Primary	km	$28,876,734	0.000	$0	0.000	$0	
5	Waterway Crossing - Secondary (Irrig./Canal Crossing)	km	$23,119,226	0.000	$0	0.000	$0	
6	Twin Single Track Drill & Blast (<6 Miles)	km	$75,040,254	0.000	$0	0.000	$0	
7	Twin Single Track TBM (<6 Miles)	km	$55,464,535	0.000	$0	0.000	$0	
8	Twin Single Track TBM w/3rd Tube (>6 Miles)	km	$78,846,643	0.000	$0	0.000	$0	
9	Double Track Drill & Blast	km	$83,740,573	0.000	$0	0.000	$0	
10	Double Track Mined (Soft Soil)	km	$96,247,282	0.000	$0	0.000	$0	
11	Seismic Chamber (Drill & Blast/Mined)	ea	$94,803,899	0.000	$0	0.000	$0	
12	Crossovers	ea	$94,803,899	0.000	$0	0.000	$0	
13	Cut & Cover Double Track Tunnel	km	$48,123,641	0.000	$0	0.000	$0	
14	Trench Short	km	$49,668,587	0.000	$0	0.000	$0	
15	Trench Long	km	$39,272,836	0.000	$0	0.000	$0	
16	Mechanical & Electrical for Tunnels	km	$1,931,362	0.000	$0	0.000	$0	
17	Retaining Walls	km	$4,399,945	0.000	$0	19.350	$85,138,942	
18	Containment Walls	km	$1,500,559	0.000	$0	0.000	$0	
19	Single Track Cut and Cover Subway	km	$30,077,276	0.000	$0	0.000	$0	
Grade Separations								
1	Street Overcrossing HSR - (Urban)	ea	$17,167,417	0.000	$0	0.000	$0	
2	Street Overcrossing HSR - (Suburban)	ea	$6,485,469	0.000	$0	1.000	$6,485,469	
3	Street Overcrossing HSR - (Undeveloped)	ea	$1,093,628	0.000	$0	1.000	$1,093,628	
4	Street Undercrossing HSR - (Urban)	ea	$17,930,413	0.000	$0	2.000	$35,860,826	
5	Street Undercrossing HSR - (Suburban)	ea	$6,866,967	0.000	$0	1.000	$6,866,967	
6	Street Undercrossing HSR - (Undeveloped)	ea	$1,157,211	0.000	$0	2.000	$2,314,422	
7	Street Bridging HSR Trench	ea		0.000	$0	0.000	$0	
8	Minor crossing closures	ea	$178,032	3.000	$534,097	3.000	$534,097	
9	Grade crossing	ea	$250,000	8.000	$2,000,000	0.000	$0	
Stations, Including Parking								
1	Terminal	LS	$106,346,890	0.000	$0	0.000	$0	
2	Site Development/Parking (Terminal Station)	LS	$26,586,722	0.000	$0	0.000	$0	
3	Urban	LS	$53,173,445	0.000	$0	0.000	$0	
4	Site Development/Parking (Urban Station)	LS	$13,293,361	0.000	$0	0.000	$0	
5	Suburban	LS	$26,586,722	1.000	$26,586,722	2.000	$53,173,445	
6	Site Development/Parking (Suburban Station)	LS	$6,646,681	1.000	$6,646,681	2.000	$13,293,361	
7	Rural	LS	$13,293,361	1.000	$13,293,361	0.000	$0	
8	Site Development/Parking (Rural Station)	LS	$2,658,672	1.000	$2,658,672	0.000	$0	
9	Parking - Structure	space	$15,886	0.000	$0	0.000	$0	
10	Parking - At Grade	space	$2,277	0.000	$0	0.000	$0	
Yards and Shops								
1		km	$0	0.000	$0	0.000	$0	
2		km	$0	0.000	$0	0.000	$0	
3		km	$0	0.000	$0	0.000	$0	
4		km	$0	0.000	$0	0.000	$0	
Rail and Utility Relocation								
1	Single Track Relocation (Temporary)	km	$1,271,661	0.000	$0	0.000	$0	
2	Single Track Relocation (Permanent)	km	$1,271,661	0.000	$0	0.000	$0	
3	Single Track Removal	km	$63,372	0.000	$0	6.230	$394,811	
4	Major Utility Relocations - Dense Urban	km	$890,162	0.000	$0	0.000	$0	
5	Major Utility Relocations - Urban	km	$680,338	2.990	$2,034,416	4.026	$2,739,178	
6	Major Utility Relocations - Dense Suburban	km	$476,873	0.000	$0	0.000	$0	
7	Major Utility Relocations - Suburban	km	$273,407	1.362	$372,490	6.179	$1,689,355	
8	Major Utility Relocations - Undeveloped	km	$13,988	1.907	$26,677	23.175	$324,178	
Right of Way Items								
1	Right-of-Way Required for Each Segment							
	Dense Urban	Hectares	$4,106,412	0.000	$0	0.000	$0	
	Urban	Hectares	$2,737,608	4.557	$12,475,281	6.135	$16,795,227	
	Dense Suburban	Hectares	$1,368,804	0.000	$0	0.000	$0	
	Suburban	Hectares	$479,081	2.076	$994,573	9.416	$4,511,030	
	Undeveloped	Hectares	$342,201	9.003	$3,080,835	29.984	$10,260,554	
Environmental Mitigation								
	Environmental Mitigation (3% of Line Cost)				$2,640,956		$21,665,231	
System Elements								
1	Signaling (CTC with cab signals)(per track km)	km	$115,625	0.000	$3,169,968	66.700	$7,712,188	
2	Signaling (CTC) single track	km	$93,750	0.000	$1,690,649	0.000	$0	
3	Signaling (CTC) double track	km	$178,125	35.630	$6,346,594	0.000	$0	
Electrification Items								
1	Traction Power Supply	km	$807,783	0.000	$0	33.350	$26,939,563	
2	Traction Power Distribution	LS		0.000	$0	-	$16,680,000	
Program Implementation Costs (PER SCREENI								
	Program Implementation Costs (25.5% Total Constr. & Procurement Cost)				$27,341,999		$197,728,634	
Contingencies (PER SCREENING)								
	Contingencies (25% of Total Construction Cost)				$26,805,881		$193,851,602	
Total Construction					$88,031,880		$722,174,368	
Total Construction and ROW (Incl. Envir. Mitgtn)					$107,223,525		$775,406,409	
Grand Total					**$161,371,406**		**$1,166,986,645**	

	COST ELEMENTS	UNIT	UNIT PRICE (YR NOV-2006)	Tracy to Stockton - SUMMARY				NOTES
				Alternative 1		Alternative 2		
Alignment Cost				Quantities	Item Cost	Quantities	Item Cost	
Track Items								
	Double Track Section - Total	km		0.00		34.56		
1	Double Track Section - At-Grade	km	$993,167	0.000	$0	32.406	$32,184,565	
2	Double Track Section - On Structure	km	$1,878,243	0.000	$0	2.150	$4,038,222	
3	Double Track Section - In Tunnel or Subway	km	$1,878,243	0.000	$0	0.000	$0	
4	Double Track Section - In Trench	km	$1,878,243	0.000	$0	0.000	$0	
	Single Track Section - Total	km		34.556		20.540		
5	Single Track Section - At Grade	km	$496,583	32.406	$16,092,283	18.890	$9,380,461	
6	Single Track Section - On Structure	km	$939,121	2.150	$2,019,111	1.650	$1,549,550	
7	Single Track Sections - In Tunnel or Subway	km	$939,121	0.000	$0	0.000	$0	
8	Single Track Section - In Trench	km	$939,121	0.000	$0	0.000	$0	
9	Freight Double Track - At-Grade	km	$993,167	0.000	$0	0.000	$0	
10	Freight Single Track - At-Grade	km	$496,583	0.000	$0	0.000	$0	
Earthwork Items								
1	Site Preparation - Undeveloped	Hectares	$12,081	0.000	$0	0.000	$0	
2	Total Cut	m3	$9	721,305.000	$6,420,786	2,163,915.000	$19,262,357	
3	Total Fill	m3	$9	1,010,630.000	$8,996,248	2,538,661.000	$22,598,205	
4	Borrow	m3	$13	0.000	$0	0.000	$0	
5	Spoil	m3	$0	0.000	$0	0.000	$0	
6	Landscape/Erosion Control	Hectares	$8,075	0.000	$0	0.000	$0	
7	Security Fencing (Both Sides of R/W)	km	$101,733	23.168	$2,356,946	23.168	$2,356,946	
8	Special Drain. Facilities (5% of Earthwork Cost)			0.000	$888,699	0.000	$2,210,875	
Structures, Tunnels, Walls								
1	Standard Structure	km	$13,733,933	0.000	$0	0.000	$0	
2	High Structure	km	$16,480,720	0.500	$8,240,360	0.500	$8,240,360	
3	Long Span Structure	km	$37,577,568	0.000	$0	0.000	$0	
4	Waterway Crossing - Primary	km	$28,876,734	0.900	$25,989,061	0.900	$25,989,061	
5	Waterway Crossing - Secondary (Irrig./Canal Crossing)	km	$23,119,226	0.000	$0	0.000	$0	
6	Twin Single Track Drill & Blast (<6 Miles)	km	$75,040,254	0.000	$0	0.000	$0	
7	Twin Single Track TBM (<6 Miles)	km	$55,464,535	0.000	$0	0.000	$0	
8	Twin Single Track TBM w/3rd Tube (>6 Miles)	km	$78,846,643	0.000	$0	0.000	$0	
9	Double Track Drill & Blast	km	$83,740,573	0.000	$0	0.000	$0	
10	Double Track Mined (Soft Soil)	km	$96,247,282	0.000	$0	0.000	$0	
11	Seismic Chamber (Drill & Blast/Mined)	ea	$94,803,899	0.000	$0	0.000	$0	
12	Crossovers	ea	$94,803,899	0.000	$0	0.000	$0	
13	Cut & Cover Double Track Tunnel	km	$48,123,641	0.000	$0	0.000	$0	
14	Trench Short	km	$49,668,587	0.000	$0	0.000	$0	
15	Trench Long	km	$39,272,836	0.000	$0	0.000	$0	
16	Mechanical & Electrical for Tunnels	km	$1,931,362	0.000	$0	0.000	$0	
17	Retaining Walls	km	$4,399,945	9.938	$43,726,657	9.938	$43,726,657	
18	Containment Walls	km	$1,500,559	0.000	$0	34.556	$51,853,330	
19	Single Track Cut and Cover Subway	km	$30,077,276	0.000	$0	0.000	$0	
Grade Separations								
1	Street Overcrossing HSR - (Urban)	ea	$17,167,417	0.000	$0	0.000	$0	
2	Street Overcrossing HSR - (Suburban)	ea	$6,485,469	0.000	$0	0.000	$0	
3	Street Overcrossing HSR - (Undeveloped)	ea	$1,093,628	0.000	$0	0.000	$0	
4	Street Undercrossing HSR - (Urban)	ea	$17,930,413	1.000	$17,930,413	3.000	$53,791,239	
5	Street Undercrossing HSR - (Suburban)	ea	$6,866,967	0.000	$0	0.000	$0	
6	Street Undercrossing HSR - (Undeveloped)	ea	$1,157,211	2.000	$2,314,422	8.000	$9,257,688	
7	Street Bridging HSR Trench	ea		0.000	$0	0.000	$0	
8	Minor crossing closures	ea	$178,032	0.000	$0	0.000	$0	
9	Grade crossing	ea	$250,000	8.000	$2,000,000	0.000	$0	
Stations, Including Parking								
1	Terminal	LS	$106,346,890	0.000	$0	0.000	$0	
2	Site Development/Parking (Terminal Station)	LS	$26,586,722	0.000	$0	0.000	$0	
3	Urban	LS	$53,173,445	0.000	$0	0.000	$0	
4	Site Development/Parking (Urban Station)	LS	$13,293,361	0.000	$0	0.000	$0	
5	Suburban	LS	$26,586,722	1.000	$26,586,722	1.000	$26,586,722	*Tracy*
6	Site Development/Parking (Suburban Station)	LS	$6,646,681	0.000	$0	0.000	$0	
7	Rural	LS	$13,293,361	1.000	$13,293,361	1.000	$13,293,361	*Lathrop platform reconstruction*
8	Site Development/Parking (Rural Station)	LS	$2,658,672	0.000	$0	0.000	$0	
9	Parking - Structure	space	$15,886	0.000	$0	0.000	$0	
10	Parking - At Grade	space	$2,277	0.000	$0	0.000	$0	
Yards and Shops								
1		km	$0	0.000	$0	0.000	$0	
2		km	$0	0.000	$0	0.000	$0	
3		km	$0	0.000	$0	0.000	$0	
4		km	$0	0.000	$0	0.000	$0	
Rail and Utility Relocation								
1	Single Track Relocation (Temporary)	km	$1,271,661	0.000	$0	0.000	$0	
2	Single Track Relocation (Permanent)	km	$1,271,661	0.000	$0	20.540	$26,119,907	
3	Single Track Removal	km	$63,372	0.000	$0	0.000	$0	
4	Major Utility Relocations - Dense Urban	km	$890,162	0.000	$0	0.000	$0	
5	Major Utility Relocations - Urban	km	$680,338	18.044	$12,275,753	18.044	$12,275,753	
6	Major Utility Relocations - Dense Suburban	km	$476,873	0.000	$0	0.000	$0	
7	Major Utility Relocations - Suburban	km	$273,407	2.048	$559,938	2.048	$559,938	
8	Major Utility Relocations - Undeveloped	km	$13,988	14.470	$202,403	14.470	$202,403	
Right of Way Items								
1	Right-of-Way Required for Each Segment							
	Dense Urban	Hectares	$4,106,412	0.000	$0	0.000	$0	
	Urban	Hectares	$2,737,608	0.000	$0	27.480	$75,229,474	
	Dense Suburban	Hectares	$1,368,804	0.000	$0	0.000	$0	
	Suburban	Hectares	$479,081	0.000	$0	3.113	$1,491,380	
	Undeveloped	Hectares	$342,201	0.000	$0	22.046	$7,544,162	
2	Right-of-Way Required for Passenger Station & Parking Facilities			0.000		0.000		
	Dense Urban	Hectares	$4,106,412	0.000		0.000		
	Urban	Hectares	$2,737,608	0.000	$0	0.000		
	Dense Suburban	Hectares	$1,368,804	1.214	$1,661,806.22	1.214	$1,661,806.22	
	Suburban	Hectares	$479,081	0.000		0.000		
	Undeveloped	Hectares	$342,201	0.000		0.000		
3	Right-of-Way Required for Maintenance and Storage Facility			0.000		0.000		
Environmental Mitigation								
	Environmental Mitigation (3% of Line Cost)				$5,881,454		$15,255,772	
System Elements								
2	Signaling (CTC with cab signals)(per track km)	km	$115,625	0.000	$0	138.224	$15,982,150	
3	Signaling (CTC) single track	km	$93,750	0.000	$0	0.000	$0	
4	Signaling (CTC) double track	km	$178,125	34.556	$6,155,288	0.000	$0	
Electrification Items								
1	Traction Power Supply	km	$432,365	0.000	$0	34.556	$14,940,790	
2	Traction Power Distribution	km	$806,233	0.000	$0	34.556	$27,860,179	
Program Implementation Costs (PER SCREENI								
	Program Implementation Costs (25.5% Total Constr. & Procurement Cost)				$49,992,355		$108,186,484	
Contingencies (PER SCREENING)								
	Contingencies (25% of Total Construction Cost)				$50,482,476		$130,945,378	

Total Construction		$196,048,451		$424,260,721	
Total Construction and ROW (Incl. Envir. Mitgtn)		$201,929,904		$523,781,510	
Grand Total		**$302,404,735**		**$762,913,371**	

	COST ELEMENTS	UNIT	UNIT PRICE (YR NOV-2006)	TRACY TO PATTERSON				NOTES
				Alternative 1		Alternative 2		
Alignment Cost				Quantities	Item Cost	Quantities	Item Cost	
Track Items								
	Double Track Section - Total	km		0.000		39.000		
1	Double Track Section - At-Grade	km	$993,167	0.000	$0	39.000	$38,733,507	
2	Double Track Section - On Structure	km	$1,878,243	0.000	$0	0.000	$0	
3	Double Track Section - In Tunnel or Subway	km	$1,878,243	0.000	$0	0.000	$0	
4	Double Track Section - In Trench	km	$1,878,243	0.000	$0	0.000	$0	
	Single Track Section - Total	km		39.000		0.000		
5	Single Track Section - At Grade	km	$496,583	39.000	$19,366,754	0.000	$0	
6	Single Track Section - On Structure	km	$939,121	0.000	$0	0.000	$0	
7	Single Track Sections - In Tunnel or Subway	km	$939,121	0.000	$0	0.000	$0	
8	Single Track Section - In Trench	km	$939,121	0.000	$0	0.000	$0	
9	Freight Double Track - At-Grade	km	$993,167	0.000	$0	0.000	$0	
10	Freight Single Track - At-Grade	km	$496,583	0.000	$0	0.000	$0	
Earthwork Items								
1	Site Preparation - Undeveloped	Hectares	$12,081	0.000	$0	0.000	$0	
2	Total Cut	m3	$9	0.000	$0	0.000	$0	
3	Total Fill	m3	$9	0.000	$0	0.000	$0	
4	Borrow	m3	$13	0.000	$0	0.000	$0	
5	Spoil	m3	$0	0.000	$0	0.000	$0	
6	Landscape/Erosion Control	Hectares	$8,075	0.000	$0	0.000	$0	
7	Security Fencing (Both Sides of R/W)	km	$101,733	0.000	$0	0.000	$0	
8	Special Drain. Facilities (5% of Earthwork Cost)				$0		$0	
Structures, Tunnels, Walls								
1	Standard Structure	km	$13,733,933	0.000	$0	0.000	$0	
2	High Structure	km	$16,480,720	0.000	$0	0.000	$0	
3	Long Span Structure	km	$37,577,568	0.000	$0	0.000	$0	
4	Waterway Crossing - Primary	km	$28,876,734	0.000	$0	0.000	$0	
5	Waterway Crossing - Secondary (Irrig./Canal Crossing)	km	$23,119,226	0.030	$693,577	0.030	$693,577	
6	Twin Single Track Drill & Blast (<6 Miles)	km	$75,040,254	0.000	$0	0.000	$0	
7	Twin Single Track TBM (<6 Miles)	km	$55,464,535	0.000	$0	0.000	$0	
8	Twin Single Track TBM w/3rd Tube (>6 Miles)	km	$78,846,643	0.000	$0	0.000	$0	
9	Double Track Drill & Blast	km	$83,740,573	0.000	$0	0.000	$0	
10	Double Track Mined (Soft Soil)	km	$96,247,282	0.000	$0	0.000	$0	
11	Seismic Chamber (Drill & Blast/Mined)	ea	$94,803,899	0.000	$0	0.000	$0	
12	Crossovers	ea	$94,803,899	0.000	$0	0.000	$0	
13	Cut & Cover Double Track Tunnel	km	$48,123,641	0.000	$0	0.000	$0	
14	Trench Short	km	$49,668,587	0.000	$0	0.000	$0	
15	Trench Long	km	$39,272,836	0.000	$0	0.000	$0	
16	Mechanical & Electrical for Tunnels	km	$1,931,362	0.000	$0	0.000	$0	
17	Retaining Walls	km	$4,399,945	0.000	$0	0.000	$0	
18	Containment Walls	km	$1,500,559	0.000	$0	39.000	$58,521,816	
19	Single Track Cut and Cover Subway	km	$30,077,276	0.000	$0	0.000	$0	
Grade Separations								
1	Street Overcrossing HSR - (Urban)	ea	$17,167,417	0.000	$0	0.000	$0	
2	Street Overcrossing HSR - (Suburban)	ea	$6,485,469	0.000	$0	0.000	$0	
3	Street Overcrossing HSR - (Undeveloped)	ea	$1,093,628	0.000	$0	1.000	$1,093,628	
4	Street Undercrossing HSR - (Urban)	ea	$17,930,413	0.000	$0	0.000	$0	
5	Street Undercrossing HSR - (Suburban)	ea	$6,866,967	0.000	$0	0.000	$0	
6	Street Undercrossing HSR - (Undeveloped)	ea	$1,157,211	0.000	$0	0.000	$0	
7	Street Bridging HSR Trench	ea		0.000	$0	0.000	$0	
8	Minor crossing closures	ea	$178,032	4.000	$712,130	5.000	$890,162	
9	Grade crossing	ea	$250,000	19.000	$4,750,000	17.000	$4,250,000	
Stations, Including Parking								
1	Terminal	LS	$106,346,890	0.000	$0	0.000	$0	
2	Site Development/Parking (Terminal Station)	LS	$26,586,722	0.000	$0	0.000	$0	
3	Urban	LS	$53,173,445	0.000	$0	0.000	$0	
4	Site Development/Parking (Urban Station)	LS	$13,293,361	0.000	$0	0.000	$0	
5	Suburban	LS	$26,586,722	1.000	$26,586,722	1.000	$26,586,722	
6	Site Development/Parking (Suburban Station)	LS	$6,646,681	1.000	$6,646,681	1.000	$6,646,681	
7	Rural	LS	$13,293,361	1.000	$13,293,361	1.000	$13,293,361	
8	Site Development/Parking (Rural Station)	LS	$2,658,672	1.000	$2,658,672	1.000	$2,658,672	
9	Parking - Structure	space	$15,886	0.000	$0	0.000	$0	
10	Parking - At Grade	space	$2,277	0.000	$0	0.000	$0	
Yards and Shops								
1		km	$0	0.000	$0	0.000	$0	
2		km	$0	0.000	$0	0.000	$0	
3		km	$0	0.000	$0	0.000	$0	
4		km	$0	0.000	$0	0.000	$0	
Rail and Utility Relocation								
1	Single Track Relocation (Temporary)	km	$1,271,661	0.000	$0	0.000	$0	
2	Single Track Relocation (Permanent)	km	$1,271,661	0.000	$0	0.000	$0	
3	Single Track Removal	km	$63,372	39.000	$2,471,527	39.000	$2,471,527	
4	Major Utility Relocations - Dense Urban	km	$890,162	0.000	$0	0.000	$0	
5	Major Utility Relocations - Urban	km	$680,338	0.000	$0	0.000	$0	
6	Major Utility Relocations - Dense Suburban	km	$476,873	0.000	$0	0.000	$0	
7	Major Utility Relocations - Suburban	km	$273,407	0.000	$0	0.000	$0	
8	Major Utility Relocations - Undeveloped	km	$13,988	0.000	$0	0.000	$0	
Right of Way Items								
1	Right-of-Way Required for Each Segment							
	Dense Urban	Hectares	$4,106,412	0.000	$0	0.000	$0	
	Urban	Hectares	$2,737,608	0.000	$0	0.000	$0	
	Dense Suburban	Hectares	$1,368,804	0.000	$0	0.000	$0	
	Suburban	Hectares	$479,081	0.000	$0	59.436	$28,474,679	
	Undeveloped	Hectares	$342,201	0.000	$0	0.000	$0	
2	Right-of-Way Required for Passenger Station & Parking Facilities							
	Dense Urban	Hectares	$4,106,412					
	Urban	Hectares	$2,737,608		$0		$0	
	Dense Suburban	Hectares	$1,368,804	0.000	$0	-	$0	
	Suburban	Hectares	$479,081	2.428	$1,163,264	2.428	$1,163,264	
	Undeveloped	Hectares	$342,201					
3	Right-of-Way Required for Maintenance and Storage Facility							
Environmental Mitigation								
	Environmental Mitigation (3% of Line Cost)				$2,400,510		$7,201,847	
System Elements								
1	Signaling (CTC with cab signals)(per track km)	km	$115,625	0.000	$0	78.000	$6,278,673	
2	Signaling (CTC) single track	km	$93,750	39.000	$1,674,313	-	$0	
3	Signaling (CTC) double track	km	$178,125		$0		$0	
Electrification Items								
1	Traction Power Supply	km	$432,365	0.000	$0	39.000	$16,862,218	
2	Traction Power Distribution	km	$806,233	0.000	$0	39.000	$31,443,078	
Program Implementation Costs (PER SCREENI								
	Program Implementation Costs (25.5% Total Constr. & Procurement Cost)				$20,107,703		$53,658,024	
Contingencies (PER SCREENING)								
	Contingencies (25% of Total Construction Cost)				$19,713,434		$52,605,906	
Total Construction					$78,853,737		$210,423,624	
Total Construction and ROW (Incl. Envir. Mitgtn)					$82,417,511		$247,263,414	
Grand Total					**$122,238,648**		**$353,527,344**	

Appendix
REGIONAL RAIL ALTERNATIVES 1 2 UNIT COSTS

	COST ELEMENTS	UNIT	UNIT PRICE (YR NOV-2006)	OAKLAND TO SAN JOSE				NOTES
				Alternative 1		Alternative 2		
Alignment Cost				Quantities	Item Cost	Quantities	Item Cost	
Track Items								
	Double Track Section - Total	km		21.56		63.31		
1	Double Track Section - At-Grade	km	$993,167	21.564	$21,416,806	38.600	$38,336,241	
2	Double Track Section - On Structure	km	$1,878,243	0.000	$0	22.391	$42,055,729	
3	Double Track Section - In Tunnel or Subway	km	$1,878,243	0.000	$0	1.220	$2,291,456	
4	Double Track Section - In Trench	km	$1,878,243	0.000	$0	1.100	$2,066,067	
	Single Track Section - Total	km		37.496		32.212		
5	Single Track Section - At Grade	km	$496,583	37.496	$18,619,835	28.162	$13,984,855	
6	Single Track Section - On Structure	km	$939,121	0.000	$0	0.000	$0	
7	Single Track Sections - In Tunnel or Subway	km	$939,121	0.000	$0	8.100	$7,606,882	
8	Single Track Section - In Trench	km	$939,121	0.000	$0	0.000	$0	
9	Freight Double Track - At-Grade	km	$993,167	0.000	$0	0.000	$0	
10	Freight Single Track - At-Grade	km	$496,583	47.361	$23,518,530	21.564	$10,708,403	
11	Four-track construction or reconstruction	km	$1,887,657	0.000	$0	0.000	$0	
Earthwork Items								
1	Site Preparation - Undeveloped	Hectares	$12,081	0.000	$0	0.000	$0	
2	Total Cut	m3	$9	0.000	$0	213,816.000	$1,903,310	
3	Total Fill	m3	$9	0.000	$0	213,816.000	$1,903,310	
4	Borrow	m3	$13	0.000	$0	0.000	$0	
5	Spoil	m3	$0	0.000	$0	0.000	$0	
6	Landscape/Erosion Control	Hectares	$8,075	0.000	$0	0.000	$0	
7	Security Fencing (Both Sides of R/W)	km	$101,733	0.000	$0	29.200	$2,970,599	
8	Special Drain. Facilities (5% of Earthwork Cost)				$0		$338,861	
Structures, Tunnels, Walls								
1	Standard Structure	km	$13,733,933	2.289	$31,431,913	3.147	$43,214,259	
2	High Structure	km	$16,480,720	0.000	$0	20.100	$331,262,475	
3	Long Span Structure	km	$37,577,568	0.000	$0	0.000	$0	
4	Waterway Crossing - Primary	km	$28,876,734	0.749	$21,624,546	0.250	$7,208,182	
5	Waterway Crossing - Secondary (Irrig./Canal Crossing)	km	$23,119,226	0.091	$2,113,919	0.000	$0	
6	Twin Single Track Drill & Blast (<6 Miles)	km	$75,040,254	0.000	$0	0.000	$0	
7	Twin Single Track TBM (<6 Miles)	km	$55,464,535	0.000	$0	4.050	$224,631,368	
8	Twin Single Track TBM w/3rd Tube (>6 Miles)	km	$78,846,643	0.000	$0	0.000	$0	
9	Double Track Drill & Blast	km	$83,740,573	0.000	$0	0.000	$0	
10	Double Track Mined (Soft Soil)	km	$96,247,282	0.000	$0	0.000	$0	
11	Seismic Chamber (Drill & Blast/Mined)	ea	$94,803,899	0.000	$0	0.000	$0	
12	Crossovers	ea	$94,803,899	0.000	$0	0.000	$0	
13	Cut & Cover Double Track Tunnel	km	$48,123,641	0.000	$0	1.220	$58,710,842	
14	Trench Short	km	$49,668,587	0.000	$0	1.100	$54,635,446	
15	Trench Long	km	$39,272,836	0.000	$0	0.000	$0	
16	Mechanical & Electrical for Tunnels	km	$1,931,362	0.000	$0	5.270	$10,178,278	
17	Retaining Walls	km	$4,399,945	0.000	$0	0.000	$0	
18	Containment Walls	km	$1,500,559	0.000	$0	63.311	$95,001,916	
19	Single Track Cut and Cover Subway	km	$30,077,276	0.000	$0	0.000	$0	
Grade Separations								
1	Street Overcrossing HSR - (Urban)	ea	$17,167,417	0	$0	2	$34,334,834	
2	Street Overcrossing HSR - (Suburban)	ea	$6,485,469	6	$38,912,811	0	$0	
3	Street Overcrossing HSR - (Undeveloped)	ea	$1,093,628	0	$0	0	$0	
4	Street Undercrossing HSR - (Urban)	ea	$17,930,413	9	$161,373,718	29	$519,981,980	
5	Street Undercrossing HSR - (Suburban)	ea	$6,866,967	0	$0	7	$48,068,767	
6	Street Undercrossing HSR - (Undeveloped)	ea	$1,157,211	0	$0	0	$0	
7	Street Bridging HSR Trench	ea		0	$0	0	$0	
8	Minor crossing closures	ea	$178,032	0	$0	0	$0	
9	Grade crossing	ea	$250,000	68.00	$17,000,000	47	$11,750,000	
Stations, Including Parking								
1	Terminal	LS	$106,346,890	0.000	$0	0.000	$0	
2	Site Development/Parking (Terminal Station)	LS	$26,586,722	0.000	$0	0.000	$0	
3	Urban	LS	$53,173,445	3.000	$159,520,334	3.000	$159,520,334	
4	Site Development/Parking (Urban Station)	LS	$13,293,361	3.000	$39,880,084	3.000	$39,880,084	
5	Suburban	LS	$26,586,722	0.000	$0	0.000	$0	
6	Site Development/Parking (Suburban Station)	LS	$6,646,681	0.000	$0	0.000	$0	
7	Rural	LS	$13,293,361	0.000	$0	0.000	$0	
8	Site Development/Parking (Rural Station)	LS	$2,658,672	0.000	$0	0.000	$0	
9	Parking - Structure	space	$15,886	0.000	$0	0.000	$0	
10	Parking - At Grade	space	$2,277	0.000	$0	0.000	$0	
Yards and Shops								
1		km	$0	0.000	$0	0.000	$0	
2		km	$0	0.000	$0	0.000	$0	
3		km	$0	0.000	$0	0.000	$0	
4		km	$0	0.000	$0	0.000	$0	
Rail and Utility Relocation								
1	Single Track Relocation (Temporary)	km	$1,271,661	0.000	$0	0.000	$0	
2	Single Track Relocation (Permanent)	km	$1,271,661	0.000	$0	0.000	$0	
3	Single Track Removal	km	$63,372	0.000	$0	0.000	$0	
4	Major Utility Relocations - Dense Urban	km	$890,162	0.000	$0	0.000	$0	
5	Major Utility Relocations - Urban	km	$680,338	0.000	$0	47.590	$32,377,303	
6	Major Utility Relocations - Dense Suburban	km	$476,873	0.000	$0	0.000	$0	
7	Major Utility Relocations - Suburban	km	$273,407	0.000	$0	16.269	$4,448,059	
8	Major Utility Relocations - Undeveloped	km	$13,988	0.000	$0	2.881	$40,296	
Right of Way Items								
1	Right-of-Way Required for Each Segment				$0		$0	
	Dense Urban	Hectares	$4,106,412	0.000	$0	0.000	$0	
	Urban	Hectares	$2,737,608	20.529	$56,200,485	72.353	$198,074,169	
	Dense Suburban	Hectares	$1,368,804	0.000	$0	0.000	$0	
	Suburban	Hectares	$479,081	0.000	$0	24.710	$11,838,100	
	Undeveloped	Hectares	$342,201	19.622	$6,714,513	4.360	$1,491,996	

Appendix
REGIONAL RAIL ALTERNATIVES 1 2 UNIT COSTS

COST ELEMENTS		UNIT	UNIT PRICE (YR NOV-2006)	OAKLAND TO SAN JOSE				NOTES
				Alternative 1		Alternative 2		
Alignment Cost				Quantities	Item Cost	Quantities	Item Cost	
2	Right-of-Way Required for Passenger Station & Parking Facilities				$0	0.000	$0	
	Dense Urban	Hectares	$4,106,412	0.000	$0	0.000	$0	
	Urban	Hectares	$2,737,608	0.000	$0	0.000	$0	
	Dense Suburban	Hectares	$1,368,804	0.000	$0	0.000	$0	
	Suburban	Hectares	$479,081	0.000	$0	0.000	$0	
	Undeveloped	Hectares	$342,201	0.000	$0	0.000	$0	
3	Right-of-Way Required for Maintenance and Storage Facility				$0		$0	
Environmental Mitigation								
Environmental Mitigation (3% of Line Cost)				0.000	$18,661,625	0.000	$63,227,893	
System Elements								
2	Signaling (CTC with cab signals)(per track km)	km	$115,625	0.000	$0	158.834	$18,365,198	
3	Signaling (CTC) single track	km	$93,750	87.270	$8,181,606	0.000	$0	
4	Signaling (CTC) double track	km	$178,125	87.270	$15,545,052	0.000	$0	
Electrification Items								
1	Traction Power Supply	km	$432,365	0.000	$0	63.311	$27,373,433	
2	Traction Power Distribution	km	$806,233	0.000	$0	63.311	$51,043,402	
Program Implementation Costs (PER SCREENI								
Program Implementation Costs (25.5% Total Constr. & Procurement Cost)					$142,580,485		$483,529,003	
Contingencies (PER SCREENING)								
Contingencies (25% of Total Construction Cost)					$139,784,789		$474,048,042	
Total Construction					$559,139,155		$1,896,192,168	
Total Construction and ROW (Incl. Envir. Mitgtn)					$640,715,778		$2,170,824,325	
Grand Total					$923,081,052		$3,128,401,370	

Appendix
REGIONAL RAIL ALTERNATIVES 1 2 UNIT COSTS

	COST ELEMENTS	UNIT	UNIT PRICE (YR NOV-2006)	SAN FRANCISCO TO SAN JOSE				NOTES
				Alternative 1		Alternative 2		
	Alignment Cost			**Quantities**	**Item Cost**	**Quantities**	**Item Cost**	
	Track Items							
1	Double Track Section - At-Grade	km	$993,167	62.100	$61,675,662	62.100	$61,675,662	
2	Double Track Section - On Structure	km	$1,878,243	1.000	$1,878,243	1.000	$1,878,243	
3	Double Track Section - In Tunnel or Subway	km	$1,878,243	4.700	$8,827,740	4.700	$8,827,740	
4	Double Track Section - In Trench	km	$1,878,243	2.650	$4,977,343	2.650	$4,977,343	
5	Single Track Section - At Grade	km	$496,583	8.530	$4,235,857	8.530	$4,235,857	
6	Single Track Section - On Structure	km	$939,121	0.000	$0	0.000	$0	
7	Single Track Sections - In Tunnel or Subway	km	$939,121	17.600	$16,528,535	17.600	$16,528,535	
8	Single Track Section - In Trench	km	$939,121	0.000	$0	0.000	$0	
9	Freight Double Track - At-Grade	km	$993,167	0.000	$0	0.000	$0	
10	Freight Single Track - At-Grade	km	$496,583	0.000	$0	0.000	$0	
11	Four-track construction or reconstruction	km	$1,887,657	0.000	$0	0.000	$0	
	Earthwork Items							
1	Site Preparation - Undeveloped	Hectares	$12,081	0.000	$0	0.000	$0	
2	Total Cut	m3	$9	2,046,311.500	$18,215,495	2,046,311.500	$18,215,495	
3	Total Fill	m3	$9	3,667,957.000	$32,650,772	3,667,957.000	$32,650,772	
4	Borrow	m3	$13	0.000	$0	0.000	$0	
5	Spoil	m3	$0	0.000	$0	0.000	$0	
4	Landscape/Erosion Control	Hectares	$8,075	0.000	$0	0.000	$0	
5	Security Fencing (Both Sides of R/W)	km	$101,733	69.200	$7,039,913	69.200	$7,039,913	
6	Special Drain. Facilities (5% of Earthwork Cost)				$2,895,309		$2,895,309	
	Structures, Tunnels, Walls							
1	Standard Structure	km	$13,733,933	0.000	$0	0.000	$0	
2	High Structure	km	$16,480,720	1.000	$16,480,720	1.000	$16,480,720	
3	Long Span Structure	km	$37,577,568	0.000	$0	0.000	$0	
4	Waterway Crossing - Primary	km	$28,876,734	0.000	$0	0.000	$0	
5	Waterway Crossing - Secondary (Irrig./Canal Crossing)	km	$23,119,226	0.000	$0	0.000	$0	
6	Twin Single Track Drill & Blast (<6 Miles)	km	$75,040,254	0.000	$0	0.000	$0	
7	Twin Single Track TBM (<6 Miles)	km	$55,464,535	0.000	$0	0.000	$0	
8	Twin Single Track TBM w/3rd Tube (>6 Miles)	km	$78,846,643	0.000	$0	0.000	$0	
9	Double Track Drill & Blast	km	$83,740,573	0.000	$0	0.000	$0	
10	Double Track Mined (Soft Soil)	km	$96,247,282	2.500	$240,618,204	2.500	$240,618,204	
11	Seismic Chamber (Drill & Blast/Mined)	ea	$94,803,899	0.000	$0	0.000	$0	
12	Crossovers	ea	$94,803,899	0.000	$0	0.000	$0	
13	Cut & Cover Double Track Tunnel	km	$48,123,641	4.700	$226,181,112	4.700	$226,181,112	
14	Trench Short	km	$49,668,587	2.650	$131,621,756	2.650	$131,621,756	
15	Trench Long	km	$39,272,836	0.000	$0	0.000	$0	
16	Mechanical & Electrical for Tunnels	km	$1,931,362	13.230	$25,551,921	13.230	$25,551,921	
17	Retaining Walls	km	$4,399,945	25.200	$110,878,623	25.200	$110,878,623	
18	Containment Walls	km	$1,500,559	78.980	$118,514,181	78.980	$118,514,181	
19	Single Track Cut and Cover Subway	km	$30,077,276	0.000	$0	0.000	$0	
	Grade Separations							
1	Street Overcrossing RR - (Urban)	ea	$17,167,417	3.000	$51,502,250	3.000	$51,502,250	
2	Street Overcrossing RR - (Suburban)	ea	$6,485,469	0.000	$0	0.000	$0	
3	Street Overcrossing RR - (Undeveloped)	ea	$1,093,628	0.000	$0	0.000	$0	
4	Street Undercrossing RR - (Urban)	ea	$17,930,413	43.000	$771,007,764	43.000	$771,007,764	
5	Street Undercrossing RR - (Suburban)	ea	$6,866,967	0.000	$0	0.000	$0	
6	Street Undercrossing RR - (Undeveloped)	ea	$1,157,211	0.000	$0	0.000	$0	
7	Minor crossing closures	ea	$178,032	0.000	$0	0.000	$0	
	Stations, Including Parking							
1	4th & King	LS	$657,756,875	1.000	$657,756,875	1.000	$657,756,875	
2	Transbay Transit Center (Underground)	LS	$653,041,875	1.000	$653,041,875	1.000	$653,041,875	
3	San Jose Diridon Station	LS	$153,697,500	1.000	$153,697,500	1.000	$153,697,500	
4	Millbrae/SFO Station	LS	$24,150,000	1.000	$24,150,000	1.000	$24,150,000	
5	Palo Alto	LS	$56,076,875	1.000	$56,076,875	1.000	$56,076,875	
6	Site Development/Parking (Suburban Station)	LS	$6,646,681	0.000	$0	0.000	$0	
7	Rural	LS	$13,293,361	0.000	$0	0.000	$0	
8	Site Development/Parking (Rural Station)	LS	$2,658,672	0.000	$0	0.000	$0	
9	Parking - Structure	space	$15,886	0.000	$0	0.000	$0	
10	Parking - At Grade	space	$2,277	0.000	$0	0.000	$0	
	Yards and Shops							
1		km	$0	0.000	$0	0.000	$0	
2		km	$0	0.000	$0	0.000	$0	
3		km	$0	0.000	$0	0.000	$0	
4		km	$0	0.000	$0	0.000	$0	
	Rail and Utility Relocation							
1	Single Track Relocation (Temporary)	km	$1,271,661	0.000	$0	0.000	$0	
2	Single Track Relocation (Permanent)	km	$1,271,661	0.000	$0	0.000	$0	
3	Single Track Removal	km	$63,372	0.000	$0	0.000	$0	
4	Major Utility Relocations - Dense Urban	km	$890,162	0.000	$0	0.000	$0	
5	Major Utility Relocations - Urban	km	$680,338	0.000	$0	0.000	$0	
6	Major Utility Relocations - Dense Suburban	km	$476,873	0.000	$0	0.000	$0	
7	Major Utility Relocations - Suburban	km	$273,407	0.000	$0	0.000	$0	
8	Major Utility Relocations - Undeveloped	km	$13,988	8.530	$119,320	8.530	$119,320	
	Right of Way Items							
1	Right-of-Way Required for Each Segment				$0		$0	
	Dense Urban	Hectares	$4,106,412	0.000	$0	0.000	$0	
	Urban	Hectares	$2,737,608	0.000	$0	0.000	$0	
	Dense Suburban	Hectares	$1,368,804	0.000	$0	0.000	$0	
	Suburban	Hectares	$479,081	0.000	$0	0.000	$0	
	Undeveloped	Hectares	$342,201	0.000	$0	0.000	$0	
2	Right-of-Way Required for Passenger Station & Parking Facilities				$581,629		$581,629	
	Dense Urban	Hectares	$4,106,412	0.000	$0	0.000	$0	
	Urban	Hectares	$2,737,608	0.000	$0	0.000	$0	
	Dense Suburban	Hectares	$1,368,804	0.000	$0	0.000	$0	
	Suburban	Hectares	$479,081	1.214	$581,629	1.214	$581,629	
	Undeveloped	Hectares	$342,201	0.000	$0	0.000	$0	
3	Right-of-Way Required for Maintenance and Storage Facility				$0		$0	
	Environmental Mitigation							
	Environmental Mitigation (3% of Line Cost)				$101,901,164		$101,901,164	
	System Elements							
1	Signaling (ATC)	km	$845,654	0.000	$0	0.000	$0	
2	Signaling (CTC with cab signals)(per track km)	km	$115,625	0.000	$0	0.000	$0	
3	Signaling (CTC) single track	km	$93,750	26.130	$2,449,688	26.130	$2,449,688	
4	Signaling (CTC) double track	km	$178,125	70.450	$12,548,906	70.450	$12,548,906	
5	Communications (w/Fiber Optic Backbone)	km	$699,413	0.000	$0	0.000	$0	
6	Wayside Protection System	km	$67,144	0.000	$0	0.000	$0	
	Electrification Items							
1	Traction Power Supply	km	$432,365	0.000	$0	0.000	$0	
2	Traction Power Distribution	km	$806,233	0.000	$0	0.000	$0	
	Program Implementation Costs (Design, CM & Agency Cost)							
	Program Implementation Costs (25.5% Total Constr. & Procurement Cost)				$869,836,221		$869,836,221	
	Contingencies							
	Contingencies (25% of Total Construction Cost)				$852,780,609		$852,780,609	
	Total Construction				$3,411,122,436		$3,411,122,436	
	Total Construction and ROW (Incl. Envir. Mitgtn)				$3,513,605,229		$3,513,605,229	
	Grand Total				$5,236,222,060		$5,236,222,060	

Appendix
REGIONAL RAIL ALTERNATIVES 1 2 UNIT COSTS

	COST ELEMENTS	UNIT	UNIT PRICE (YR NOV-2006)	SAN JOSE TO GILROY				NOTES
				Alternative 1		Alternative 2		
Alignment Cost				Quantities	Item Cost	Quantities	Item Cost	
Track Items								
	Double Track Section - Total	km		0.00		48.50		
1	Double Track Section - At-Grade	km	$993,167	0.000	$0	37.350	$37,094,782	
2	Double Track Section - On Structure	km	$1,878,243	0.000	$0	11.150	$20,942,405	
3	Double Track Section - In Tunnel or Subway	km	$1,878,243	0.000	$0	0.000	$0	
4	Double Track Section - In Trench	km	$1,878,243	0.000	$0	0.000	$0	
	Single Track Section - Total	km		33.634		0.000		
5	Single Track Section - At Grade	km	$496,583	33.634	$16,701,912	0.000	$0	
6	Single Track Section - On Structure	km	$939,121	0.000	$0	0.000	$0	
7	Single Track Sections - In Tunnel or Subway	km	$939,121	0.000	$0	0.000	$0	
8	Single Track Section - In Trench	km	$939,121	0.000	$0	0.000	$0	
9	Freight Double Track - At-Grade	km	$993,167	0.000	$0	0.000	$0	
10	Freight Single Track - At-Grade	km	$496,583	0.000	$0	0.000	$0	
11	Four-track construction or reconstruction	km	$1,887,657	0.000	$0	0.000	$0	
Earthwork Items								
1	Site Preparation - Undeveloped	Hectares	$12,081	0.000	$0	0.000	$0	
2	Total Cut	m3	$9	0.000	$0	283,860.000	$2,526,815	
3	Total Fill	m3	$9	0.000	$0	141,344.500	$1,258,196	
4	Borrow	m3	$13	0.000	$0	0.000	$0	
5	Spoil	m3	$0	0.000	$0	0.000	$0	
4	Landscape/Erosion Control	Hectares	$8,075	0.000	$0	0.000	$0	
5	Security Fencing (Both Sides of R/W)	km	$101,733	0.000	$0	37.450	$3,809,895	
6	Special Drain. Facilities (5% of Earthwork Cost)				$0		$379,745	
Structures, Tunnels, Walls								
1	Standard Structure	km	$13,733,933	0.117	$1,611,571	7.050	$96,824,231	
2	High Structure	km	$16,480,720	0.000	$0	4.100	$67,570,953	
3	Long Span Structure	km	$37,577,568	0.000	$0	0.000	$0	
4	Waterway Crossing - Primary	km	$28,876,734	0.000	$0	0.000	$0	
5	Waterway Crossing - Secondary (Irrig./Canal Crossing)	km	$23,119,226	0.041	$944,217	0.000	$0	
6	Twin Single Track Drill & Blast (<6 Miles)	km	$75,040,254	0.000	$0	0.000	$0	
7	Twin Single Track TBM (<6 Miles)	km	$55,464,535	0.000	$0	0.000	$0	
8	Twin Single Track TBM w/3rd Tube (>6 Miles)	km	$78,846,643	0.000	$0	0.000	$0	
9	Double Track Drill & Blast	km	$83,740,573	0.000	$0	0.000	$0	
10	Double Track Mined (Soft Soil)	km	$96,247,282	0.000	$0	0.000	$0	
11	Seismic Chamber (Drill & Blast/Mined)	ea	$94,803,899	0.000	$0	0.000	$0	
12	Crossovers	ea	$94,803,899	0.000	$0	0.000	$0	
13	Cut & Cover Double Track Tunnel	km	$48,123,641	0.000	$0	0.000	$0	
14	Trench Short	km	$49,668,587	0.000	$0	0.000	$0	
15	Trench Long	km	$39,272,836	0.000	$0	0.000	$0	
16	Mechanical & Electrical for Tunnels	km	$1,931,362	0.000	$0	0.000	$0	
17	Retaining Walls	km	$4,399,945	0.000	$0	1.200	$5,279,934	
18	Containment Walls	km	$1,500,559	0.000	$0	0.000	$0	
19	Single Track Cut and Cover Subway	km	$30,077,276	0.000	$0	0.000	$0	
Grade Separations								
1	Street Overcrossing HSR - (Urban)	ea	$17,167,417	0	$0	0	$0	
2	Street Overcrossing HSR - (Suburban)	ea	$6,485,469	0	$0	0	$0	
3	Street Overcrossing HSR - (Undeveloped)	ea	$1,093,628	0	$0	0	$0	
4	Street Undercrossing HSR - (Urban)	ea	$17,930,413	2.000	$35,860,826	3.000	$53,791,239	
5	Street Undercrossing HSR - (Suburban)	ea	$6,866,967	0		20.000	$137,339,335	
6	Street Undercrossing HSR - (Undeveloped)	ea	$1,157,211	0	$0	0	$0	
7	Street Bridging HSR Trench	ea		0	$0	0	$0	
8	Minor crossing closures	ea	$178,032	7	$1,246,227	0	$0	
9	Grade crossing	ea		27	$0	0	$0	
Stations, Including Parking								
1	Terminal	LS	$106,346,890	0.000	$0	0.000	$0	
2	Site Development/Parking (Terminal Station)	LS	$26,586,722	0.000	$0	0.000	$0	
3	Urban	LS	$53,173,445	0.000	$0	0.000	$0	
4	Site Development/Parking (Urban Station)	LS	$13,293,361	0.000	$0	0.000	$0	
5	Suburban	LS	$26,586,722	6.000	$159,520,334	6.000	$159,520,334	
6	Site Development/Parking (Suburban Station)	LS	$6,646,681	0.000	$0	0.000	$0	
7	Rural	LS	$13,293,361	0.000	$0	0.000	$0	
8	Site Development/Parking (Rural Station)	LS	$2,658,672	0.000	$0	0.000	$0	
9	Parking - Structure	space	$15,886	0.000	$0	0.000	$0	
10	Parking - At Grade	space	$2,277	0.000	$0	0.000	$0	
Yards and Shops								
1		km	$0	0.000	$0	0.000	$0	
2		km	$0	0.000	$0	0.000	$0	
3		km	$0	0.000	$0	0.000	$0	
4		km	$0	0.000	$0	0.000	$0	
Rail and Utility Relocation								
1	Single Track Relocation (Temporary)	km	$1,271,661		$0		$0	
2	Single Track Relocation (Permanent)	km	$1,271,661		$0		$0	
3	Single Track Removal	km	$63,372		$0		$0	
4	Major Utility Relocations - Dense Urban	km	$890,162		$0		$0	
5	Major Utility Relocations - Urban	km	$680,338		$0	17.965	$12,222,279	
6	Major Utility Relocations - Dense Suburban	km	$476,873		$0		$0	
7	Major Utility Relocations - Suburban	km	$273,407		$0	13.425	$3,670,489	
8	Major Utility Relocations - Undeveloped	km	$13,988		$0	17.110	$239,339	
Right of Way Items								
1	Right-of-Way Required for Each Segment							
	Dense Urban	Hectares	$4,106,412		$0		$0	
	Urban	Hectares	$2,737,608		$0	27.310	$74,764,081	

Appendix
REGIONAL RAIL ALTERNATIVES 1 2 UNIT COSTS

	COST ELEMENTS	UNIT	UNIT PRICE (YR NOV-2006)	SAN JOSE TO GILROY				NOTES
				Alternative 1		Alternative 2		
Alignment Cost				Quantities	Item Cost	Quantities	Item Cost	
	Dense Suburban	Hectares	$1,368,804		$0		$0	
	Suburban	Hectares	$479,081		$0	20.410	$9,778,050	
	Undeveloped	Hectares	$342,201		$0	26.010	$8,900,647	
2	Right-of-Way Required for Passenger Station & Parking Facilities							
	Dense Urban	Hectares	$4,106,412		$0		$0	
	Urban	Hectares	$2,737,608	0	$0		$0	
	Dense Suburban	Hectares	$1,368,804		$0		$0	
	Suburban	Hectares	$479,081	2.43	$1,163,760		$0	
	Undeveloped	Hectares	$342,201		$0		$0	
3	Right-of-Way Required for Maintenance and Storage Facility							
Environmental Mitigation								
	Environmental Mitigation (3% of Line Cost)				$6,890,794		$20,380,961	
System Elements								
1	Signaling (CTC with cab signals)(per track km)	km	$115,625	0.000	$0	145.500	$16,823,438	
2	Signaling (CTC) single track	km	$93,750	46.508	$4,360,104	0.000	$0	
3	Signaling (CTC) double track	km	$178,125	46.508	$8,284,197	0.000	$0	
Electrification Items								
1	Traction Power Supply	km	$432,365	0.000	$0	48.500	$20,969,682	
2	Traction Power Distribution	km	$806,233	0.000	$0	48.500	$39,102,289	
Support Facility Costs								
1	Facility cost breakdown	ea						
Program Implementation Costs (PER SCREENI								
	Program Implementation Costs (25.5% Total Constr. & Procurement Cost)				$58,274,994		$173,238,171	
Contingencies (PER SCREENING)								
	Contingencies (25% of Total Construction Cost)				$57,132,347		$169,841,345	
Total Construction					$228,529,389		$679,365,378	
Total Construction and ROW (Incl. Envir. Mitgtn)					$236,583,944		$793,189,118	
Grand Total					$351,991,285		$1,136,268,634	

	COST ELEMENTS	UNIT	UNIT PRICE (YR NOV-2006)	GILROY TO SALINAS				NOTES
				Alternative 1		Alternative 2		
Alignment Cost				Quantities	Item Cost	Quantities	Item Cost	
Track Items								
	Double Track Section - Total	km		0.00		0.00		
1	Double Track Section - At-Grade	km	$993,167	0.000	$0	0.000	$0	
2	Double Track Section - On Structure	km	$1,878,243	0.000	$0	0.000	$0	
3	Double Track Section - In Tunnel or Subway	km	$1,878,243	0.000	$0	0.000	$0	
4	Double Track Section - In Trench	km	$1,878,243	0.000	$0	0.000	$0	
	Single Track Section - Total	km		61.313		61.313		
5	Single Track Section - At Grade	km	$496,583	61.313	$30,447,027	61.313	$30,447,027	
6	Single Track Section - On Structure	km	$939,121	0.000	$0	0.000	$0	
7	Single Track Sections - In Tunnel or Subway	km	$939,121	0.000	$0	0.000	$0	
8	Single Track Section - In Trench	km	$939,121	0.000	$0	0.000	$0	
9	Freight Double Track - At-Grade	km	$993,167	0.000	$0	0.000	$0	
10	Freight Single Track - At-Grade	km	$496,583	0.000	$0	0.000	$0	
11	Four-track construction or reconstruction	km	$1,887,657	0.000	$0	0.000	$0	
Earthwork Items								
1	Site Preparation - Undeveloped	Hectares	$12,081	0.000	$0	0.000	$0	
2	Total Cut	m3	$9	0.000	$0	0.000	$0	
3	Total Fill	m3	$9	0.000	$0	0.000	$0	
4	Borrow	m3	$13	0.000	$0	0.000	$0	
5	Spoil	m3	$0	0.000	$0	0.000	$0	
4	Landscape/Erosion Control	Hectares	$8,075	0.000	$0	0.000	$0	
5	Security Fencing (Both Sides of R/W)	km	$101,733	0.000	$0	0.000	$0	
6	Special Drain. Facilities (5% of Earthwork Cost)				$0		$0	
Structures, Tunnels, Walls								
1	Standard Structure	km	$13,733,933	0.157	$2,151,552	0.157	$2,151,552	
2	High Structure	km	$16,480,720	0.000	$0	0.000	$0	
3	Long Span Structure	km	$37,577,568	0.000	$0	0.000	$0	
4	Waterway Crossing - Primary	km	$28,876,734	0.378	$10,913,487	0.378	$10,913,487	
5	Waterway Crossing - Secondary (Irrig./Canal Crossing)	km	$23,119,226	0.048	$1,106,284	0.048	$1,106,284	
6	Twin Single Track Drill & Blast (<6 Miles)	km	$75,040,254	0.000	$0	0.000	$0	
7	Twin Single Track TBM (<6 Miles)	km	$55,464,535	0.000	$0	0.000	$0	
8	Twin Single Track TBM w/3rd Tube (>6 Miles)	km	$78,846,643	0.000	$0	0.000	$0	
9	Double Track Drill & Blast	km	$83,740,573	0.000	$0	0.000	$0	
10	Double Track Mined (Soft Soil)	km	$96,247,282	0.000	$0	0.000	$0	
11	Seismic Chamber (Drill & Blast/Mined)	ea	$94,803,899	0.000	$0	0.000	$0	
12	Crossovers	ea	$94,803,899	0.000	$0	0.000	$0	
13	Cut & Cover Double Track Tunnel	km	$48,123,641	0.000	$0	0.000	$0	
14	Trench Short	km	$49,668,587	0.000	$0	0.000	$0	
15	Trench Long	km	$39,272,836	0.000	$0	0.000	$0	
16	Mechanical & Electrical for Tunnels	km	$1,931,362	0.000	$0	0.000	$0	
17	Retaining Walls	km	$4,399,945	0.000	$0	0.000	$0	
18	Containment Walls	km	$1,500,559	0.000	$0	0.000	$0	
19	Single Track Cut and Cover Subway	km	$30,077,276	0.000	$0	0.000	$0	
Grade Separations								
1	Street Overcrossing HSR - (Urban)	ea	$17,167,417	0	$0	0	$0	
2	Street Overcrossing HSR - (Suburban)	ea	$6,485,469	1	$6,485,469	1	$6,485,469	
3	Street Overcrossing HSR - (Undeveloped)	ea	$1,093,628	0	$0	0	$0	
4	Street Undercrossing HSR - (Urban)	ea	$17,930,413	0	$0	0	$0	
5	Street Undercrossing HSR - (Suburban)	ea	$6,866,967	0				
6	Street Undercrossing HSR - (Undeveloped)	ea	$1,157,211	0	$0	0	$0	
7	Street Bridging HSR Trench	ea		0	$0	0	$0	
8	Minor crossing closures	ea	$178,032	21.000	$3,738,682	21.000	$3,738,682	
9	Grade crossing	ea	$250,000	3.000	$750,000	3.000	$750,000	
Building Items				0.000	$0	0.000	$0	
1	Terminal	LS	$111,906,124	0.000	$0	0.000	$0	
2	Site Development/Parking (Terminal Station)	LS	$27,976,531	0.000	$0	0.000	$0	
3	Urban	LS	$55,953,062	0.000	$0	0.000	$0	
4	Site Development/Parking (Urban Station)	LS	$13,988,266					
5	Suburban	LS	$27,976,531	2.000	$55,953,062	2.000	$55,953,062	
6	Site Development/Parking (Suburban Station)	LS	$6,994,133	0.000	$0	0.000	$0	
7	Rural	LS	$13,988,266	0.000	$0	0.000	$0	
8	Site Development/Parking (Rural Station)	LS	$2,797,653	0.000	$0	0.000	$0	
9	Parking - Structure	space	$16,716	0.000	$0	0.000	$0	
10	Parking - At Grade	space	$2,396					
Stations, Including Parking								
1	Terminal	LS	$106,346,890	0.000	$0	0.000	$0	
2	Site Development/Parking (Terminal Station)	LS	$26,586,722	0.000	$0	0.000	$0	
3	Urban	LS	$53,173,445	0.000	$0	0.000	$0	
4	Site Development/Parking (Urban Station)	LS	$13,293,361	0.000	$0	0.000	$0	
5	Suburban	LS	$26,586,722	2.000	$53,173,445	2.000	$53,173,445	
6	Site Development/Parking (Suburban Station)	LS	$6,646,681	2.000	$13,293,361	2.000	$13,293,361	
7	Rural	LS	$13,293,361	0.000	$0	0.000	$0	
8	Site Development/Parking (Rural Station)	LS	$2,658,672	0.000	$0	0.000	$0	
9	Parking - Structure	space	$15,886	0.000	$0	0.000	$0	
10	Parking - At Grade	space	$2,277					
Yards and Shops								
1		km	$0	0.000	$0	0.000	$0	
2		km	$0	0.000	$0	0.000	$0	
3		km	$0	0.000	$0	0.000	$0	
4		km	$0	0.000	$0	0.000	$0	
Rail and Utility Relocation					$34,913		$34,913	
1	Single Track Relocation (Temporary)	km	$1,271,661		$0		$0	
2	Single Track Relocation (Permanent)	km	$1,271,661	0	$0		$0	
3	Single Track Removal	km	$63,372	0	$0		$0	
4	Major Utility Relocations - Dense Urban	km	$890,162	0	$0		$0	
5	Major Utility Relocations - Urban	km	$680,338		$0		$0	
6	Major Utility Relocations - Dense Suburban	km	$476,873	0	$0		$0	
7	Major Utility Relocations - Suburban	km	$273,407	0	$0		$0	
8	Major Utility Relocations - Undeveloped	km	$13,988		$0		$0	
Right of Way Items					$0		$0	
1	Right-of-Way Required for Each Segment							

Appendix
REGIONAL RAIL ALTERNATIVES 1 2 UNIT COSTS

	COST ELEMENTS	UNIT	UNIT PRICE (YR NOV-2006)	GILROY TO SALINAS				NOTES
				Alternative 1		Alternative 2		
Alignment Cost				Quantities	Item Cost	Quantities	Item Cost	
	Dense Urban	Hectares	$4,106,412		$0		$0	
	Urban	Hectares	$2,737,608		$0		$0	
	Dense Suburban	Hectares	$1,368,804		$0		$0	
	Suburban	Hectares	$479,081		$0		$0	
	Undeveloped	Hectares	$342,201		$0		$0	
2	Right-of-Way Required for Passenger Station & Parking Facilities				$1,163,760		$1,163,760	
	Dense Urban	Hectares	$4,106,412		$0		$0	
	Urban	Hectares	$2,737,608		$0		$0	
	Dense Suburban	Hectares	$1,368,804		$0		$0	
	Suburban	Hectares	$479,081	2.43	$1,163,760	2.43	$1,163,760	
	Undeveloped	Hectares	$342,201		$0		$0	
3	Right-of-Way Required for Maintenance and Storage Facility				$0		$0	
Environmental Mitigation								
	Environmental Mitigation (3% of Line Cost)							
System Elements								
2	Signaling (CTC with cab signals)(per track km)	km	$115,625					
3	Signaling (CTC) single track	km	$93,750					
4	Signaling (CTC) double track	km	$178,125	61.313	$10,921,380.68	61.313	$10,921,380.68	
Electrification Items								
1	Traction Power Supply	km	$432,365					
2	Traction Power Distribution	km	$806,233					
Program Implementation Costs (PER SCREENIN								
	Program Implementation Costs (25.5% Total Constr. & Procurement Cost)				$48,780,527		$48,780,527	
Contingencies (PER SCREENING)								
	Contingencies (25% of Total Construction Cost)				$47,824,046		$47,824,046	
Total Construction					$188,968,662		$188,968,662	
Total Construction and ROW (Incl. Envir. Mitgtn)					$191,296,183		$191,296,183	
Grand Total					$287,900,755		$287,900,755	

	COST ELEMENTS	UNIT	UNIT PRICE (YR NOV-2006)	SANTA CRUZ TO WATSONVILLE JCT.				NOTES
				Alternative 1		Alternative 2		
Alignment Cost				Quantities	Item Cost	Quantities	Item Cost	
Track Items								
	Double Track Section - Total	km		0.00		0.00		
1	Double Track Section - At-Grade	km	$993,167	0.000	$0	0.000	$0	
2	Double Track Section - On Structure	km	$1,878,243	0.000	$0	0.000	$0	
3	Double Track Section - In Tunnel or Subway	km	$1,878,243	0.000	$0	0.000	$0	
4	Double Track Section - In Trench	km	$1,878,243	0.000	$0	0.000	$0	
	Single Track Section - Total	km		35.115		35.115		
5	Single Track Section - At Grade	km	$496,583	35.115	$17,437,479	35.115	$17,437,479	
6	Single Track Section - On Structure	km	$939,121	0.000	$0	0.000	$0	
7	Single Track Sections - In Tunnel or Subway	km	$939,121	0.000	$0	0.000	$0	
8	Single Track Section - In Trench	km	$939,121	0.000	$0	0.000	$0	
9	Freight Double Track - At-Grade	km	$993,167	0.000	$0	0.000	$0	
10	Freight Single Track - At-Grade	km	$496,583	0.000	$0	0.000	$0	
11	Four-track construction or reconstruction	km	$1,887,657	0.000	$0	0.000	$0	
Earthwork Items								
1	Site Preparation - Undeveloped	Hectares	$12,081	0.000	$0	0.000	$0	
2	Total Cut	m3	$9	0.000	$0	0.000	$0	
3	Total Fill	m3	$9	0.000	$0	0.000	$0	
4	Borrow	m3	$13	0.000	$0	0.000	$0	
5	Spoil	m3	$0	0.000	$0	0.000	$0	
4	Landscape/Erosion Control	Hectares	$8,075	0.000	$0	0.000	$0	
5	Security Fencing (Both Sides of R/W)	km	$101,733	0.000	$0	0.000	$0	
6	Special Drain. Facilities (5% of Earthwork Cost)				$0		$0	
Structures, Tunnels, Walls								
1	Standard Structure	km	$13,733,933	0.690	$9,472,689	0.690	$9,472,689	
2	High Structure	km	$16,480,720	0.177	$2,913,385	0.177	$2,913,385	
3	Long Span Structure	km	$37,577,568	0.000	$0	0.000	$0	
4	Waterway Crossing - Primary	km	$28,876,734	0.656	$18,940,181	0.656	$18,940,181	
5	Waterway Crossing - Secondary (Irrig./Canal Crossing)	km	$23,119,226	0.018	$422,784	0.018	$422,784	
6	Twin Single Track Drill & Blast (<6 Miles)	km	$75,040,254	0.000	$0	0.000	$0	
7	Twin Single Track TBM (<6 Miles)	km	$55,464,535	0.000	$0	0.000	$0	
8	Twin Single Track TBM w/3rd Tube (>6 Miles)	km	$78,846,643	0.000	$0	0.000	$0	
9	Double Track Drill & Blast	km	$83,740,573	0.000	$0	0.000	$0	
10	Double Track Mined (Soft Soil)	km	$96,247,282	0.000	$0	0.000	$0	
11	Seismic Chamber (Drill & Blast/Mined)	ea	$94,803,899	0.000	$0	0.000	$0	
12	Crossovers	ea	$94,803,899	0.000	$0	0.000	$0	
13	Cut & Cover Double Track Tunnel	km	$48,123,641	0.000	$0	0.000	$0	
14	Trench Short	km	$49,668,587	0.000	$0	0.000	$0	
15	Trench Long	km	$39,272,836	0.000	$0	0.000	$0	
16	Mechanical & Electrical for Tunnels	km	$1,931,362	0.000	$0	0.000	$0	
17	Retaining Walls	km	$4,399,945	0.104	$455,953	0.104	$455,953	
18	Containment Walls	km	$1,500,559	0.000	$0	0.000	$0	
19	Single Track Cut and Cover Subway	km	$30,077,276	0.000	$0	0.000	$0	
Grade Separations								
1	Street Overcrossing HSR - (Urban)	ea	$17,167,417	0	$0	0	$0	
2	Street Overcrossing HSR - (Suburban)	ea	$6,485,469	0	$0	0	$0	
3	Street Overcrossing HSR - (Undeveloped)	ea	$1,093,628	0	$0	0	$0	
4	Street Undercrossing HSR - (Urban)	ea	$17,930,413	0	$0	0	$0	
5	Street Undercrossing HSR - (Suburban)	ea	$6,866,967	0	$0	0	$0	
6	Street Undercrossing HSR - (Undeveloped)	ea	$1,157,211	0	$0	0	$0	
7	Street Bridging HSR Trench	ea		0	$0	0	$0	
8	Minor crossing closures	ea	$178,032	8	$1,424,260	8	$1,424,260	
9	Grade crossing	ea	$250,000	36	$9,000,000	36	$9,000,000	
Stations, Including Parking								
1	Terminal	LS	$106,346,890	0.000	$0	0.000	$0	
2	Site Development/Parking (Terminal Station)	LS	$26,586,722	0.000	$0	0.000	$0	
3	Urban	LS	$53,173,445	0.000	$0	0.000	$0	
4	Site Development/Parking (Urban Station)	LS	$13,293,361	0.000	$0	0.000	$0	
5	Suburban	LS	$26,586,722	10.000	$265,867,224	10.000	$265,867,224	
6	Site Development/Parking (Suburban Station)	LS	$6,646,681	10.000	$66,466,806	10.000	$66,466,806	
7	Rural	LS	$13,293,361	0.000	$0	0.000	$0	
8	Site Development/Parking (Rural Station)	LS	$2,658,672	0.000	$0	0.000	$0	
9	Parking - Structure	space	$15,886	0.000	$0	0.000	$0	
10	Parking - At Grade	space	$2,277	0.000	$0	0.000	$0	
Yards and Shops								
1		km	$0	0.000	$0	0.000	$0	
2		km	$0	0.000	$0	0.000	$0	
3		km	$0	0.000	$0	0.000	$0	
4		km	$0	0.000	$0	0.000	$0	
Rail and Utility Relocation								
1	Single Track Relocation (Temporary)	km	$1,271,661		$0		$0	
2	Single Track Relocation (Permanent)	km	$1,271,661		$0		$0	
3	Single Track Removal	km	$63,372		$0		$0	
4	Major Utility Relocations - Dense Urban	km	$890,162		$0		$0	
5	Major Utility Relocations - Urban	km	$680,338		$0		$0	
6	Major Utility Relocations - Dense Suburban	km	$476,873		$0		$0	
7	Major Utility Relocations - Suburban	km	$273,407		$0		$0	
8	Major Utility Relocations - Undeveloped	km	$13,988		$0		$0	
Right of Way Items								
1	Right-of-Way Required for Each Segment							
	Dense Urban	Hectares	$4,106,412		$0		$0	
	Urban	Hectares	$2,737,608		$0		$0	
	Dense Suburban	Hectares	$1,368,804		$0		$0	
	Suburban	Hectares	$479,081		$0		$0	
	Undeveloped	Hectares	$342,201		$0		$0	
2	Right-of-Way Required for Passenger Station & Parking Facilities							
	Dense Urban	Hectares	$4,106,412		$0		$0	
	Urban	Hectares	$2,737,608		$0		$0	
	Dense Suburban	Hectares	$1,368,804		$0		$0	
	Suburban	Hectares	$479,081	8.097	$3,879,201	8.097	$3,879,201	
	Undeveloped	Hectares	$342,201		$0		$0	

Appendix
REGIONAL RAIL ALTERNATIVES 1 2 UNIT COSTS

	COST ELEMENTS	UNIT	UNIT PRICE (YR NOV-2006)	SANTA CRUZ TO WATSONVILLE JCT.				NOTES
				Alternative 1		Alternative 2		
Alignment Cost				Quantities	Item Cost	Quantities	Item Cost	
3	Right-of-Way Required for Maintenance and Storage Facility							
Environmental Mitigation								
	Environmental Mitigation (3% of Line Cost)				$11,959,668		$11,959,668	
System Elements								
2	Signaling (CTC with cab signals)(per track km)	km	$115,625	0.000	$0	0.000	$0	
3	Signaling (CTC) single track	km	$93,750	0.000	$0	0.000	$0	
4	Signaling (CTC) double track	km	$178,125	35.115	$6,254,842	35.115	$6,254,842	
Electrification Items								
1	Traction Power Supply	km	$432,365		$0		$0	
2	Traction Power Distribution	km	$806,233		$0		$0	
Support Facility Costs								
1	Facility cost breakdown	ea						
Program Implementation Costs (PER SCREENING)								
	Program Implementation Costs (25.5% Total Constr. & Procurement Cost)				$101,657,179		$101,657,179	
Contingencies (PER SCREENING)								
	Contingencies (25% of Total Construction Cost)				$99,663,901		$99,663,901	
Total Construction					$398,655,603		$398,655,603	
Total Construction and ROW (Incl. Envir. Mitgtn)					$414,494,472		$414,494,472	
Grand Total					$615,815,551		$615,815,551	

	COST ELEMENTS	UNIT	UNIT PRICE (YR NOV-2006)	CASTROVILLE TO MONTEREY				NOTES
				Alternative 1		Alternative 2		
	Alignment Cost			**Quantities**	**Item Cost**	**Quantities**	**Item Cost**	
	Track Items							
	Double Track Section - Total	**km**		**0.00**		**0.00**		
1	Double Track Section - At-Grade	km	$993,167	0.000	$0	0.000	$0	
2	Double Track Section - On Structure	km	$1,878,243	0.000	$0	0.000	$0	
3	Double Track Section - In Tunnel or Subway	km	$1,878,243	0.000	$0	0.000	$0	
4	Double Track Section - In Trench	km	$1,878,243	0.000	$0	0.000	$0	
	Single Track Section - Total	**km**		**21.682**		**21.682**		
5	Single Track Section - At Grade	km	$496,583	21.682	$10,767,127	21.682	$10,767,127	
6	Single Track Section - On Structure	km	$939,121	0.000	$0	0.000	$0	
7	Single Track Sections - In Tunnel or Subway	km	$939,121	0.000	$0	0.000	$0	
8	Single Track Section - In Trench	km	$939,121	0.000	$0	0.000	$0	
9	Freight Double Track - At-Grade	km	$993,167	0.000	$0	0.000	$0	
10	Freight Single Track - At-Grade	km	$496,583	0.000	$0	0.000	$0	
11	Four-track construction or reconstruction	km	$1,887,657	0.000	$0	0.000	$0	
	Earthwork Items							
1	Site Preparation - Undeveloped	Hectares	$12,081	0.000	$0	0.000	$0	
2	Total Cut	m3	$9	0.000	$0	0.000	$0	
3	Total Fill	m3	$9	0.000	$0	0.000	$0	
4	Borrow	m3	$13	0.000	$0	0.000	$0	
5	Spoil	m3	$0	0.000	$0	0.000	$0	
4	Landscape/Erosion Control	Hectares	$8,075	0.000	$0	0.000	$0	
5	Security Fencing (Both Sides of R/W)	km	$101,733	0.000	$0	0.000	$0	
6	Special Drain. Facilities (5% of Earthwork Cost)				$0		$0	
	Structures, Tunnels, Walls							
1	Standard Structure	km	$13,733,933	0.133	$1,820,866	0.133	$1,820,866	
2	High Structure	km	$16,480,720	0.000	$0	0.000	$0	
3	Long Span Structure	km	$37,577,568	0.000	$0	0.000	$0	
4	Waterway Crossing - Primary	km	$28,876,734	0.218	$6,292,857	0.218	$6,292,857	
5	Waterway Crossing - Secondary (Irrig./Canal Crossing)	km	$23,119,226	0.059	$1,374,047	0.059	$1,374,047	
6	Twin Single Track Drill & Blast (<6 Miles)	km	$75,040,254	0.000	$0	0.000	$0	
7	Twin Single Track TBM (<6 Miles)	km	$55,464,535	0.000	$0	0.000	$0	
8	Twin Single Track TBM w/3rd Tube (>6 Miles)	km	$78,846,643	0.000	$0	0.000	$0	
9	Double Track Drill & Blast	km	$83,740,573	0.000	$0	0.000	$0	
10	Double Track Mined (Soft Soil)	km	$96,247,282	0.000	$0	0.000	$0	
11	Seismic Chamber (Drill & Blast/Mined)	ea	$94,803,899	0.000	$0	0.000	$0	
12	Crossovers	ea	$94,803,899	0.000	$0	0.000	$0	
13	Cut & Cover Double Track Tunnel	km	$48,123,641	0.000	$0	0.000	$0	
14	Trench Short	km	$49,668,587	0.000	$0	0.000	$0	
15	Trench Long	km	$39,272,836	0.000	$0	0.000	$0	
16	Mechanical & Electrical for Tunnels	km	$1,931,362	0.000	$0	0.000	$0	
17	Retaining Walls	km	$4,399,945	0.000	$0	0.000	$0	
18	Containment Walls	km	$1,500,559	0.000	$0	0.000	$0	
19	Single Track Cut and Cover Subway	km	$30,077,276	0.000	$0	0.000	$0	
	Grade Separations							
1	Street Overcrossing HSR - (Urban)	ea	$17,167,417	0	$0	0	$0	
2	Street Overcrossing HSR - (Suburban)	ea	$6,485,469	0	$0	0	$0	
3	Street Overcrossing HSR - (Undeveloped)	ea	$1,093,628	0	$0	0	$0	
4	Street Undercrossing HSR - (Urban)	ea	$17,930,413	0	$0	0	$0	
5	Street Undercrossing HSR - (Suburban)	ea	$6,866,967	0	$0	0	$0	
6	Street Undercrossing HSR - (Undeveloped)	ea	$1,157,211	0	$0	0	$0	
7	Street Bridging HSR Trench	ea		0	$0	0	$0	
8	Minor crossing closures	ea	$178,032	2	$356,065	2	$356,065	
9	Grade crossing	ea	$250,000	20	$5,000,000	20	$5,000,000	
	Stations, Including Parking							
1	Terminal	LS	$106,346,890	0.000	$0	0.000	$0	
2	Site Development/Parking (Terminal Station)	LS	$26,586,722	0.000	$0	0.000	$0	
3	Urban	LS	$53,173,445	0.000	$0	0.000	$0	
4	Site Development/Parking (Urban Station)	LS	$13,293,361	0.000	$0	0.000	$0	
5	Suburban	LS	$26,586,722	4.000	$106,346,890	4.000	$106,346,890	
6	Site Development/Parking (Suburban Station)	LS	$6,646,681	4.000	$26,586,722	4.000	$26,586,722	
7	Rural	LS	$13,293,361	0.000	$0	0.000	$0	
8	Site Development/Parking (Rural Station)	LS	$2,658,672	0.000	$0	0.000	$0	
9	Parking - Structure	space	$15,886	0.000	$0	0.000	$0	
10	Parking - At Grade	space	$2,277	0.000	$0	0.000	$0	
	Yards and Shops							
1		km	$0	0.000	$0	0.000	$0	
2		km	$0	0.000	$0	0.000	$0	
3		km	$0	0.000	$0	0.000	$0	
4		km	$0	0.000	$0	0.000	$0	
	Rail and Utility Relocation							
1	Single Track Relocation (Temporary)	km	$1,271,661		$0		$0	
2	Single Track Relocation (Permanent)	km	$1,271,661		$0		$0	
3	Single Track Removal	km	$63,372		$0		$0	
4	Major Utility Relocations - Dense Urban	km	$890,162		$0		$0	
5	Major Utility Relocations - Urban	km	$680,338		$0		$0	
6	Major Utility Relocations - Dense Suburban	km	$476,873		$0		$0	
7	Major Utility Relocations - Suburban	km	$273,407		$0		$0	
8	Major Utility Relocations - Undeveloped	km	$13,988		$0		$0	
	Right of Way Items							
1	Right-of-Way Required for Each Segment							
	Dense Urban	Hectares	$4,106,412		$0		$0	
	Urban	Hectares	$2,737,608		$0		$0	
	Dense Suburban	Hectares	$1,368,804		$0		$0	
	Suburban	Hectares	$479,081		$0		$0	
	Undeveloped	Hectares	$342,201		$0		$0	
2	Right-of-Way Required for Passenger Station & Parking Facilities							
	Dense Urban	Hectares	$4,106,412		$0		$0	
	Urban	Hectares	$2,737,608		$0		$0	
	Dense Suburban	Hectares	$1,368,804		$0		$0	
	Suburban	Hectares	$479,081	3.24	$1,551,680	3.24	$1,551,680	

Appendix
REGIONAL RAIL ALTERNATIVES 1 2 UNIT COSTS

COST ELEMENTS		UNIT	UNIT PRICE (YR NOV-2006)	CASTROVILLE TO MONTEREY				NOTES
				Alternative 1		Alternative 2		
Alignment Cost				Quantities	Item Cost	Quantities	Item Cost	
	Undeveloped	Hectares	$342,201		$0		$0	
3	Right-of-Way Required for Maintenance and Storage Facility							
Environmental Mitigation								
Environmental Mitigation (3% of Line Cost)					$6,419,811		$6,419,811	
System Elements								
2	Signaling (CTC with cab signals)(per track km)	km	$115,625	0.000	$0	0.000	$0	
3	Signaling (CTC) single track	km	$93,750	0.000	$0	0.000	$0	
4	Signaling (CTC) double track	km	$178,125	20.920	$3,726,455	20.920	$3,726,455	
Electrification Items								
1	Traction Power Supply	km	$432,365		$0		$0	
2	Traction Power Distribution	km	$806,233		$0		$0	
Support Facility Costs								
1	Facility cost breakdown	ea						
Program Implementation Costs (PER SCREENING)								
Program Implementation Costs (25.5% Total Constr. & Procurement Cost)					$41,379,113		$41,379,113	
Contingencies (PER SCREENING)								
Contingencies (25% of Total Construction Cost)					$40,567,758		$40,567,758	
Total Construction					$162,271,030		$162,271,030	
Total Construction and ROW (Incl. Envir. Mitgtn)					$170,242,522		$170,242,522	
Grand Total					$252,189,392		$252,189,392	

Appendix
REGIONAL RAIL ALTERNATIVES 1 2 UNIT COSTS

	COST ELEMENTS	UNIT	UNIT PRICE (YR NOV-2006)	GILROY TO HOLLISTER				NOTES
				Alternative 1		Alternative 2		
Alignment Cost				Quantities	Item Cost	Quantities	Item Cost	
Track Items								
	Double Track Section - Total	km		0.00		19.31		
1	Double Track Section - At-Grade	km	$993,167	0.000	$0	19.311	$19,179,229	
2	Double Track Section - On Structure	km	$1,878,243	0.000	$0	0.000	$0	
3	Double Track Section - In Tunnel or Subway	km	$1,878,243	0.000	$0	0.000	$0	
4	Double Track Section - In Trench	km	$1,878,243	0.000	$0	0.000	$0	
	Single Track Section - Total	km		19.311		19.311		
5	Single Track Section - At Grade	km	$496,583	19.311	$9,589,523	19.311	$9,589,615	
6	Single Track Section - On Structure	km	$939,121	0.000	$0	0.000	$0	
7	Single Track Sections - In Tunnel or Subway	km	$939,121	0.000	$0	0.000	$0	
8	Single Track Section - In Trench	km	$939,121	0.000	$0	0.000	$0	
9	Freight Double Track - At-Grade	km	$993,167	0.000	$0	0.000	$0	
10	Freight Single Track - At-Grade	km	$496,583	0.000	$0	0.000	$0	
11	Four-track construction or reconstruction	km	$1,887,657	0.000	$0	0.000	$0	
Earthwork Items								
1	Site Preparation - Undeveloped	Hectares	$12,081	0.000	$0	0.000	$0	
2	Total Cut	m3	$9	0.000	$0	0.000	$0	
3	Total Fill	m3	$9	0.000	$0	0.000	$0	
4	Borrow	m3	$13	0.000	$0	0.000	$0	
5	Spoil	m3	$0	0.000	$0	0.000	$0	
4	Landscape/Erosion Control	Hectares	$8,075	0.000	$0	0.000	$0	
5	Security Fencing (Both Sides of R/W)	km	$101,733	0.000	$0	0.000	$0	
6	Special Drain. Facilities (5% of Earthwork Cost)				$0		$0	
Structures, Tunnels, Walls								
1	Standard Structure	km	$13,733,933	0.047	$640,442	0.140	$1,921,327	
2	High Structure	km	$16,480,720	0.000	$0	0.000	$0	
3	Long Span Structure	km	$37,577,568	0.000	$0	0.000	$0	
4	Waterway Crossing - Primary	km	$28,876,734	0.000	$0	0.000	$0	
5	Waterway Crossing - Secondary (Irrig./Canal Crossing)	km	$23,119,226	0.105	$2,431,007	0.315	$7,293,020	
6	Twin Single Track Drill & Blast (<6 Miles)	km	$75,040,254	0.000	$0	0.000	$0	
7	Twin Single Track TBM (<6 Miles)	km	$55,464,535	0.000	$0	0.000	$0	
8	Twin Single Track TBM w/3rd Tube (>6 Miles)	km	$78,846,643	0.000	$0	0.000	$0	
9	Double Track Drill & Blast	km	$83,740,573	0.000	$0	0.000	$0	
10	Double Track Mined (Soft Soil)	km	$96,247,282	0.000	$0	0.000	$0	
11	Seismic Chamber (Drill & Blast/Mined)	ea	$94,803,899	0.000	$0	0.000	$0	
12	Crossovers	ea	$94,803,899	0.000	$0	0.000	$0	
13	Cut & Cover Double Track Tunnel	km	$48,123,641	0.000	$0	0.000	$0	
14	Trench Short	km	$49,668,587	0.000	$0	0.000	$0	
15	Trench Long	km	$39,272,836	0.000	$0	0.000	$0	
16	Mechanical & Electrical for Tunnels	km	$1,931,362	0.000	$0	0.000	$0	
17	Retaining Walls	km	$4,399,945	0.000	$0	0.000	$0	
18	Containment Walls	km	$1,500,559	0.000	$0	0.000	$0	
19	Single Track Cut and Cover Subway	km	$30,077,276	0.000	$0	0.000	$0	
Grade Separations								
1	Street Overcrossing HSR - (Urban)	ea	$17,167,417	0	$0	0	$0	
2	Street Overcrossing HSR - (Suburban)	ea	$6,485,469	0	$0	0	$0	
3	Street Overcrossing HSR - (Undeveloped)	ea	$1,093,628	0	$0	4	$4,374,512	
4	Street Undercrossing HSR - (Urban)	ea	$17,930,413	0	$0	0	$0	
5	Street Undercrossing HSR - (Suburban)	ea	$6,866,967	0		5	$34,334,834	
6	Street Undercrossing HSR - (Undeveloped)	ea	$1,157,211	0	$0	0	$0	
7	Street Bridging HSR Trench	ea		0	$0	0	$0	
8	Minor crossing closures	ea	$178,032	12	$2,136,390	12	$2,136,390	
9	Grade crossing	ea	$250,000	12	$3,000,000	0	$0	
Stations, Including Parking								
1	Terminal	LS	$106,346,890	0.000	$0	0.000	$0	
2	Site Development/Parking (Terminal Station)	LS	$26,586,722	0.000	$0	0.000	$0	
3	Urban	LS	$53,173,445	0.000	$0	0.000	$0	
4	Site Development/Parking (Urban Station)	LS	$13,293,361	0.000	$0	0.000	$0	
5	Suburban	LS	$26,586,722	1.000	$26,586,722	1.000	$26,586,722	
6	Site Development/Parking (Suburban Station)	LS	$6,646,681	1.000	$6,646,681	1.000	$6,646,681	
7	Rural	LS	$13,293,361	0.000	$0	0.000	$0	
8	Site Development/Parking (Rural Station)	LS	$2,658,672	0.000	$0	0.000	$0	
9	Parking - Structure	space	$15,886	0.000	$0	0.000	$0	
10	Parking - At Grade	space	$2,277	0.000	$0	0.000	$0	
Yards and Shops								
1		km	$0	0.000	$0	0.000	$0	
2		km	$0	0.000	$0	0.000	$0	
3		km	$0	0.000	$0	0.000	$0	
4		km	$0	0.000	$0	0.000	$0	
Rail and Utility Relocation								
1	Single Track Relocation (Temporary)	km	$1,271,661		$0		$0	
2	Single Track Relocation (Permanent)	km	$1,271,661		$0		$0	
3	Single Track Removal	km	$63,372	19.311	$1,223,786	19.311	$1,223,786	
4	Major Utility Relocations - Dense Urban	km	$890,162		$0		$0	
5	Major Utility Relocations - Urban	km	$680,338		$0	0.000	$0	
6	Major Utility Relocations - Dense Suburban	km	$476,873		$0		$0	
7	Major Utility Relocations - Suburban	km	$273,407		$0	0.000	$0	
8	Major Utility Relocations - Undeveloped	km	$13,988		$0	0.000	$0	
Right of Way Items								
1	Right-of-Way Required for Each Segment							
	Dense Urban	Hectares	$4,106,412		$0	0.000	$0	
	Urban	Hectares	$2,737,608		$0	0.000	$0	
	Dense Suburban	Hectares	$1,368,804		$0	-	$0	
	Suburban	Hectares	$479,081		$0	1.534	$734,697	
	Undeveloped	Hectares	$342,201		$0	35.272	$12,070,025	

Appendix
REGIONAL RAIL ALTERNATIVES 1 2 UNIT COSTS

COST ELEMENTS		UNIT	UNIT PRICE (YR NOV-2006)	GILROY TO HOLLISTER				NOTES
				Alternative 1		Alternative 2		
Alignment Cost				Quantities	Item Cost	Quantities	Item Cost	
2	Right-of-Way Required for Passenger Station & Parking Facilities							
	Dense Urban	Hectares	$4,106,412		$0		$0	
	Urban	Hectares	$2,737,608		$0		$0	
	Dense Suburban	Hectares	$1,368,804		$0		$0	
	Suburban	Hectares	$479,081	1.21	$581,880	1.21	$581,880	
	Undeveloped	Hectares	$342,201		$0		$0	
3	Right-of-Way Required for Maintenance and Storage Facility							
Environmental Mitigation								
Environmental Mitigation (3% of Line Cost)					$1,688,287		$4,651,708	
System Elements								
1	Signaling (CTC with cab signals)(per track km)	km	$115,625	0.000	$0	38.622	$4,465,669	
2	Signaling (CTC) single track	km	$93,750	0.000	$0	0.000	$0	
3	Signaling (CTC) double track	km	$178,125	19.311	$3,439,805	0.000	$0	
Electrification Items								
1	Traction Power Supply	km	$432,365		$0	19.311	$8,349,392	
2	Traction Power Distribution	km	$806,233		$0	19.311	$15,569,161	
Support Facility Costs								
1	Facility cost breakdown	ea						
Program Implementation Costs (PER SCREENING								
Program Implementation Costs (25.5% Total Constr. & Procurement Cost)					$14,780,953		$40,725,705	
Contingencies (PER SCREENING)								
Contingencies (25% of Total Construction Cost)					$14,491,131		$39,927,162	
Total Construction					$55,694,356		$141,670,338	
Total Construction and ROW (Incl. Envir. Mitgtn)					$57,964,523		$159,708,649	
Grand Total					$87,236,607		$240,361,517	

Appendix
REGIONAL RAIL ALTERNATIVES 1 2 UNIT COSTS

	COST ELEMENTS	UNIT	UNIT PRICE (YR NOV-2006)	Transbay - San Francisco to West Oakland				NOTES
				Alternative 1		Alternative 2		
Alignment Cost				Quantities	Item Cost	Quantities	Item Cost	
Track Items								
5	Single Track Section - At Grade	km	$496,583	0.000	$0	0.000	$0	
6	Single Track Section - On Structure	km	$939,121	0.000	$0	0.000	$0	
7	Single Track Sections - In Tunnel or Subway	km	$939,121	0.000	$0	25.950	$24,370,197	
8	Single Track Section - In Trench	km	$939,121	0.000	$0	0.000	$0	
9	Freight Double Track - At-Grade	km	$993,167	0.000	$0	0.000	$0	
10	Freight Single Track - At-Grade	km	$496,583	0.000	$0	0.000	$0	
11	Four-track construction or reconstruction	km	$1,887,657	0.000	$0	0.000	$0	
Earthwork Items								
1	Site Preparation - Undeveloped	Hectares	$12,081	0.000	$0	0.000	$0	
2	Total Cut	m3	$9	0.000	$0	0.000	$0	
3	Total Fill	m3	$9	0.000	$0	0.000	$0	
4	Borrow	m3	$13	0.000	$0	0.000	$0	
5	Spoil	m3	$0	0.000	$0	0.000	$0	
4	Landscape/Erosion Control	Hectares	$8,075	0.000	$0	0.000	$0	
5	Security Fencing (Both Sides of R/W)	km	$101,733	0.000	$0	0.000	$0	
6	Special Drain. Facilities (5% of Earthwork Cost)				$0		$0	
Structures, Tunnels, Walls								
1	Standard Structure	km	$13,733,933	0.000	$0	0.000	$0	
2	High Structure	km	$16,480,720	0.000	$0	0.000	$0	
3	Long Span Structure	km	$37,577,568	0.000	$0	0.000	$0	
4	Waterway Crossing - Primary	km	$28,876,734	0.000	$0	0.000	$0	
5	Waterway Crossing - Secondary (Irrig./Canal Crossing)	km	$23,119,226	0.000	$0	0.000	$0	
6	Twin Single Track Drill & Blast (<6 Miles)	km	$75,040,254	0.000	$0	0.000	$0	
7	Twin Single Track TBM (<6 Miles)	km	$55,464,535	0.000	$0	0.000	$0	
8	Twin Single Track TBM w/3rd Tube (>6 Miles)	km	$78,846,643	0.000	$0	12.975	$1,023,035,195	
9	Double Track Drill & Blast	km	$83,740,573	0.000	$0	0.000	$0	
10	Double Track Mined (Soft Soil)	km	$96,247,282	0.000	$0	0.000	$0	
11	Seismic Chamber (Drill & Blast/Mined)	ea	$94,803,899	0.000	$0	0.000	$0	
12	Crossovers	ea	$94,803,899	0.000	$0	0.000	$0	
13	Cut & Cover Double Track Tunnel	km	$48,123,641	0.000	$0	0.000	$0	
14	Trench Short	km	$49,668,587	0.000	$0	0.000	$0	
15	Trench Long	km	$39,272,836	0.000	$0	0.800	$31,418,269	
16	Mechanical & Electrical for Tunnels	km	$1,931,362	0.000	$0	12.975	$25,059,423	
17	Retaining Walls	km	$4,399,945	0.000	$0	0.000	$0	
18	Containment Walls	km	$1,500,559	0.000	$0	0.000	$0	
19	Single Track Cut and Cover Subway	km	$30,077,276	0.000	$0	0.000	$0	
Grade Separations								
1	Street Overcrossing RR - (Urban)	ea	$17,167,417	0.000	$0	0.000	$0	
2	Street Overcrossing RR - (Suburban)	ea	$6,485,469	0.000	$0	0.000	$0	
3	Street Overcrossing RR - (Undeveloped)	ea	$1,093,628	0.000	$0	0.000	$0	
4	Street Undercrossing RR - (Urban)	ea	$17,930,413	0.000	$0	0.000	$0	
5	Street Undercrossing RR - (Suburban)	ea	$6,866,967	0.000	$0	0.000	$0	
6	Street Undercrossing RR - (Undeveloped)	ea	$1,157,211	0.000	$0	0.000	$0	
7	Minor crossing closures	ea	$178,032	0.000	$0	0.000	$0	
Stations, Including Parking								
1	Terminal	LS	$106,346,890	0.000	$0	1.000	$106,346,890	
2	Site Development/Parking (Terminal Station)	LS	$26,586,722	0.000	$0	1.000	$26,586,722	
3	Urban	LS	$53,173,445	0.000	$0	0.000	$0	
4	Site Development/Parking (Urban Station)	LS	$13,293,361	0.000	$0	0.000	$0	
5	Suburban	LS	$26,586,722	0.000	$0	0.000	$0	
6	Site Development/Parking (Suburban Station)	LS	$6,646,681	0.000	$0	0.000	$0	
7	Rural	LS	$13,293,361	0.000	$0	0.000	$0	
8	Site Development/Parking (Rural Station)	LS	$2,658,672	0.000	$0	0.000	$0	
9	Parking - Structure	space	$15,886	0.000	$0	1,500.000	$23,828,748	
10	Parking - At Grade	space	$2,277	0.000	$0	500.000	$1,138,685	
Yards and Shops								
1	Yard and Shop	ls	$75,000,000	0.000	$0	1.000	$75,000,000	
2		km	$0	0.000	$0	0.000	$0	
3		km	$0	0.000	$0	0.000	$0	
4		km	$0	0.000	$0	0.000	$0	
Rail and Utility Relocation								
1	Single Track Relocation (Temporary)	km	$1,271,661	0.000	$0	0.000	$0	
2	Single Track Relocation (Permanent)	km	$1,271,661	0.000	$0	0.000	$0	
3	Single Track Removal	km	$63,372	0.000	$0	0.000	$0	
4	Major Utility Relocations - Dense Urban	km	$890,162	0.000	$0	0.000	$0	
5	Major Utility Relocations - Urban	km	$680,338	0.000	$0	0.000	$0	
6	Major Utility Relocations - Dense Suburban	km	$476,873	0.000	$0	0.000	$0	
7	Major Utility Relocations - Suburban	km	$273,407	0.000	$0	0.000	$0	
8	Major Utility Relocations - Undeveloped	km	$13,988	0.000	$0	0.000	$0	
Right of Way Items								
1	Right-of-Way Required for Each Segment				$0		$16,425,649	
	Dense Urban	Hectares	$4,106,412	0.000	$0	0.000	$0	
	Urban	Hectares	$2,737,608	0.000	$0	6.000	$16,425,649	
	Dense Suburban	Hectares	$1,368,804	0.000	$0	0.000	$0	
	Suburban	Hectares	$479,081	0.000	$0	0.000	$0	
	Undeveloped	Hectares	$342,201	0.000	$0	0.000	$0	
2	Right-of-Way Required for Passenger Station & Parking Facilities				$0		$8,212,825	
	Dense Urban	Hectares	$4,106,412	0.000	$0	0.000	$0	
	Urban	Hectares	$2,737,608	0.000	$0	3.000	$8,212,825	
	Dense Suburban	Hectares	$1,368,804	0.000	$0	0.000	$0	
	Suburban	Hectares	$479,081	0.000	$0	0.000	$0	

Appendix
REGIONAL RAIL ALTERNATIVES 1 2 UNIT COSTS

	COST ELEMENTS	UNIT	UNIT PRICE (YR NOV-2006)	Transbay - San Francisco to West Oakland				NOTES
				Alternative 1		Alternative 2		
Alignment Cost				Quantities	Item Cost	Quantities	Item Cost	
	Undeveloped	Hectares	$342,201	0.000	$0	0.000	$0	
3	Right-of-Way Required for Maintenance and Storage Facility				$0		$0	
Environmental Mitigation								
	Environmental Mitigation (3% of Line Cost)				$0		$40,842,678	
System Elements								
1	Signaling (ATC)	km	$845,654	0.000	$0	0.000	$0	
2	Signaling (CTC with cab signals)(per track km)	km	$115,625	0.000	$0	27.550	$3,185,469	
3	Signaling (CTC) single track	km	$93,750	0.000	$0	0.000	$0	
4	Signaling (CTC) double track	km	$178,125	0.000	$0	0.000	$0	
5	Communications (w/Fiber Optic Backbone)	km	$699,413	0.000	$0	13.775	$9,634,418	
6	Wayside Protection System	km	$67,144	0.000	$0	0.800	$53,715	
Electrification Items								
1	Traction Power Supply	km	$432,365	0.000	$0	13.775	$5,955,822	
2	Traction Power Distribution	km	$806,233	0.000	$0	13.775	$11,105,856	
Program Implementation Costs (Design, CM & Agency Cost)								
	Program Implementation Costs (25.5% Total Constr. & Procurement Cost)				$0		$348,513,450	
Contingencies								
	Contingencies (25% of Total Construction Cost)				$0		$341,679,852	
Total Construction					$0		$1,366,719,410	
Total Construction and ROW (Incl. Envir. Mitgtn)					$0		$1,432,200,562	
Grand Total					$0		$2,122,393,864	

DRAFT

BAY AREA REGIONAL RAIL PLAN

BART OPTIONS
OAKLAND AND SAN FRANCISCO
ORDER OF MAGNITUDE ESTIMATE

FOR

REGIONAL RAIL PROJECT MANAGEMENT TEAM

PREPARED BY

EARTH TECH
2101 WEBSTER STREET, OAKLAND, CALIFORNIA

(REV A)
DECEMBER 5, 2006

EARTH TECH
A TYCO INTERNATIONAL LTD. COMPANY

INTRODUCTION

As part of the overall Bay Area Regional Rail Plan Study, this estimate is limited to the evaluation of the following three BART Options only:

- BART Option 1: Oakland to San Francisco Presidio
- BART Option 2: Oakland to San Francisco 33rd Avenue
- BART Option F: Oakland Fourth Bore Tunnel (Broadway Street)

PURPOSE

The purpose of this study is to develop an order of magnitude cost estimate for BART expansion options from Oakland to San Francisco as part of the overall Bay Area Regional Rail Plan.

SUMMARY OF OPTIONS

The summary below is based on the preliminary information available at this time:

BART OPTIONS	COST
• BART Option 1: Oakland to San Francisco Presidio	$ 9.71 Billion
• BART Option 2: Oakland to San Francisco 33rd Avenue	$10.17 Billion
• BART Option F: Oakland Fourth Bore Tunnel (Broadway Street)	$ 0.31 Billion

SCOPE OF THE ESTIMATE

The scope of work is as follows:

BART Option 1: Oakland to San Francisco (Presidio)

- West Oakland to Alameda (6,850 Route Meters) twin bored tunnel (BART), includes two (2) underground stations and one parking structure with 2000 parking spaces.
- Alameda to SF Bay Crossing (4,650 Route Meters) – 4 tracks Transbay Tube (BART & HSR) **
- Station 4th & Townsend, San Francisco (1,146 Route Meters) (BART & HSR) **
- 4th & Townsend to San Francisco Presidio (7,400 Route Meters) twin bore tunnel (BART), includes six (6) underground stations and one parking structure with 2000 parking spaces.
- Allowance for Maintenance Facility Expansion
- Easements and Right-of Way Allowances

** Trackwork and systems for HSR not included. HSR Ventilation Included

BART Option 2: Oakland to San Francisco (33rd Avenue)

- West Oakland to Alameda (6,850 Route Meters) twin bored tunnel (BART), includes two (2) underground stations and one parking structure with 2000 parking spaces.

- Alameda to SF Bay Crossing – 4 tracks Transbay Tube 3,670 Route Meters (HSR & BART), 2 tracks Transbay Tube 1,580 Route Meters (BART), 2 tracks Transbay Tube 1,310 Route Meters (HSR) **
- 4th & Townsend HSR Station (720 Route Meters) **
- Fremont Street to 33rd Avenue (7,000 Route Meters) twin bore tunnel (BART), includes nine (9) underground stations

** Trackwork and systems for HSR not included. HSR Ventilation Included

BART Option F: Oakland Fourth Bore Tunnel (Broadway Street)

- MacArthur Station to Oakland East Portal (840 Route Meters) – At Grade including miscellaneous modifications
- Oakland East Portal to Oakland West Portal - 1,000 Route Meter mined tunnel under existing BART tracks, 200 Route Meter of retained cut and 50 Route Meters of Aerial Structure and modifications to existing BART Stations at 12th and 19th Street

DOCUMENTS & INFORMATION USED

The following documents were prepared by Earth Tech, Inc and used to develop quantities for this estimate study:

- Bay Area – Bay Crossing West Oakland Existing BART Additions / Modifications Dated: 10-30-06
- Bay Area – Bay Crossing Oakland to San Francisco. Options 1 Dated: 06-22-06
- Bay Area – Bay Crossing Oakland to San Francisco. Options 2 Dated: 07-01-06

PRICING

All pricing is based on 4th quarter 2006 dollars.

The transbay crossing cost per route meter is based on historical cost data from BART's website which has been escalated to 2006 dollars and factored for current seismic and environmental standards. All other pricing is based on recent regional BART projects and have been modified for this estimate study.

The unit costs used for this estimate study are as follows:

Typical Tunneling & Bay Crossing Costs

- Twin Bore Tunnel - $70,000 / Route Meter
- 2- Twin Bore Tunnels (4 Bores) - $140,000 / Route Meter
- Mining Under Existing Tracks - $60,000 / Route Meter (Oakland East to West Portal)

- Twin Track Transbay Tube - $240,000 / Route Meter
- Four Track Transbay Tube - $400,000 / Route Meter

Station Costs

- Stations Modification Allowance for Existing 12th St & 19th St Stations - $25 Million Each
- Typical New Underground BART Station - $90 Million
- New Underground HSR Station, 4th & Townsend – $230 Million
- New Underground BART / HSR Station, 4th & Townsend – $400 Million
- Parking Structure - $25,000/ Parking Stall

Typical Trackwork and System Cost

- Double Track, Direct Fixation - $2,000 / Route Meter
- Special Track Work - $1,000 / Route Meter
- Traction Power System - $3,500 / Route Meter
- Train Control System - $2,000 / Route Meter
- Communications Systems- $5,000 / Route Meter
- Tunnel Ventilation System (1 Tunnel) - $1,650 / Route Meter
- Tunnel Ventilation System (2 Tunnel) - $2,200 / Route Meter
- Tunnel Ventilation System (4 Tunnel) - $4,400 / Route Meter

Other BART Cost

- Maintenance Facilities Expansion Allowance - $100 Million
- Right-of-Way and Easements Allowances are included as follows:
  - Tunnel Segments - $40 Million per Option 1 and Option 2
  - Typical BART Stations - $10 Million per station
  - BART / HSR Station, 4th / Townsend - $25 Million (Option 1)
  - HSR Station, 4th / Townsend - $25 Million (Option 2)

SPECIAL CONDITIONS

BART Special Conditions included at 15% of the construction cost and cover the following costs:

- Modifications to BART Core Systems
  - Central Control Building & Miscellaneous Expansions
  - Administration Buildings
  - Existing Stations Modifications to signage, vertical circulation, fare collection and miscellaneous
- Parking Expansions for Existing Stations
- Environment Issues (Noise, Visual, Vibration, HAZMAT, etc.)
- Utility Modifications

ENGINEERING AND MANAGEMENT COSTS

Engineering and Management are included at 30% of the construction and special condition costs.

CONTINGENCY

Contingency is included at 35% of the construction, special conditions, engineering, and management costs.

ESCALATION

Escalation for future years is excluded at this time.

EXCLUSIONS

The following items are specifically excluded from the estimate:

- Escalation to the Year of Expenditure
- New Parking Structures for HSR and BART Stations.
- Operation and Maintenance Costs
- HSR Trackwork and Systems Costs
- New BART Vehicle Costs
- Project Reserve

SUMMARY REPORT

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BART OPTIONS (ALL) | COST IN USD | Dec 5, 2006 (Rev A)

	DESCRIPTION	COST / UC	SPECIAL COND	ENGR'G & CM	CONTINGENCY	TOTAL
	25.A - BART Option 1 - Oakland to San Francisco (Presidio)					
25.A.1	West Oakland to Alameda BART	817,045,000	122,556,750	281,880,525	427,518,796	1,649,001,071
25.A.2	Alameda to SF - Bay Crossing BART & HSR	1,943,235,000	291,485,250	670,416,075	1,016,797,713	3,921,934,038
25.A.3	4th & Townsend BART & HSR Station (San Francisco) BART & HSR	580,953,400	87,143,010	200,428,923	303,983,866	1,172,509,199
25.A.4	4th & Townsend to Presidio (San Francisco) BART	1,224,180,000	183,627,000	422,342,100	640,552,185	2,470,701,285
25.A.5	Other BART Costs Maintenance Facility, ROW , & Easements	245,000,000	36,750,000	84,525,000	128,196,250	494,471,250
25.A - BART Option 1 - Oakland to San Francisco (Presidio)		4,810,413,400	721,562,010	1,659,592,623	2,517,048,811	9,708,616,844
	25.B - BART Option 2 - Oakland to San Francisco (33rd Ave)					
25.B.1	West Oakland to Alameda BART	817,045,000	122,556,750	281,880,525	427,518,796	1,649,001,071
25.B.2	Alameda to SF - Bay Crossing BART & HSR	2,254,981,000	338,247,150	777,968,445	1,179,918,808	4,551,115,403
25.B.3	4th & Townsend HSR Station (San Francisco) HSR	281,984,000	42,297,600	97,284,480	147,548,128	569,114,208
25.B.4	Fremont St to 33rd Ave (San Francisco) BART	1,409,900,000	211,485,000	486,415,500	737,730,175	2,845,530,675
25.B.5	Other BART Costs Maintenance Facility, ROW , & Easements	275,000,000	41,250,000	94,875,000	143,893,750	555,018,750
25.B - BART Option 2 - Oakland to San Francisco (33rd Ave)		5,038,910,000	755,836,500	1,738,423,950	2,636,609,657	10,169,780,107
	25.F - BART Option F - Fourth Tunnel Bore (Oakland)					
25.F.1	MacArthur Station to Oakland East Portal BART	10,001,000	1,500,150	3,450,345	5,233,023	20,184,518
25.F.2	Oakland East Portal to Oakland West Portal BART Through 19th & 12th Street Stations	141,343,750	21,201,562	48,763,593	73,958,117	285,267,023
25.F - BART Option F - Fourth Tunnel Bore (Oakland)		151,344,750	22,701,712	52,213,938	79,191,140	305,451,541

UNIT COST DETAIL REPORT

WBS	ELEMENT ID	TYPE / QUANTITY UNIT	DESCRIPTION	COST / UC	SPECIAL COND	ENGR'G & CM	CONTINGENCY	TOTAL
25.A - BART Option 1 - Oakland to San Francisco (Presidio)								
25.A.1 - West Oakland to Alameda								
BART								
25.A.1	3411120	Work Element	Twin Bored Tunnel, Typical					
		6,850.000 RM		479,500,000	71,925,000	165,427,500	250,898,375	967,750,875
				70,000.00	10,500.00	24,150.00	36,627.50	141,277.50
25.A.1	3411215	Override	Below Ground Station - BART (Alameda Webster St)					
		1.000 Ea		90,000,000	13,500,000	31,050,000	47,092,500	181,642,500
				90,000,000.00	13,500,000.00	31,050,000.00	47,092,500.00	181,642,500.00
25.A.1	3411216	Override	Below Ground Station - BART (Alameda Point)					
		1.000 Ea		90,000,000	13,500,000	31,050,000	47,092,500	181,642,500
				90,000,000.00	13,500,000.00	31,050,000.00	47,092,500.00	181,642,500.00
25.A.1	3411217	Direct Entry	Alameda Point Station Parking Structure 2000 spaces					
		2,000.000 ea		50,000,000	7,500,000	17,250,000	26,162,500	100,912,500
				25,000.00	3,750.00	8,625.00	13,081.25	50,456.25
25.A.1	3412110	Work Element	Double Track, Direct Fix					
		6,850.000 RM		13,700,000	2,055,000	4,726,500	7,168,525	27,650,025
				2,000.00	300.00	690.00	1,046.50	4,036.50
25.A.1	3412120	Work Element	Special Trackwork					
		6,850.000 RM		6,850,000	1,027,500	2,363,250	3,584,262	13,825,012
				1,000.00	150.00	345.00	523.25	2,018.25
25.A.1	3422120	Work Element	Traction Power					
		6,850.000 RM		23,975,000	3,596,250	8,271,375	12,544,918	48,387,543
				3,500.00	525.00	1,207.50	1,831.37	7,063.87
25.A.1	3422122	Work Element	Train Control					
		6,850.000 RM		13,700,000	2,055,000	4,726,500	7,168,525	27,650,025
				2,000.00	300.00	690.00	1,046.50	4,036.50
25.A.1	3422124	Work Element	Communications					
		6,850.000 RM		34,250,000	5,137,500	11,816,250	17,921,312	69,125,062
				5,000.00	750.00	1,725.00	2,616.25	10,091.25
25.A.1	3422128	Work Element	Tunnel Ventilation System - 2 Tunnels					
		6,850.000 RM		15,070,000	2,260,500	5,199,150	7,885,377	30,415,027
				2,200.00	330.00	759.00	1,151.15	4,440.15
25.A.1 - West Oakland to				817,045,000	122,556,750	281,880,525	427,518,796	1,649,001,071
				0.00	0.00	0.00	0.00	0.00

WBS	ELEMENT ID	TYPE / QUANTITY UNIT	DESCRIPTION	COST / UC	SPECIAL COND	ENGR'G & CM	CONTINGENCY	TOTAL
25.A - BART Option 1 - Oakland to San Francisco (Presidio)								
25.A.2 - Alameda to SF - Bay Crossing								
BART & HSR								
25.A.2	3411140	Work Element	4 Track Transbay Tube, (BART & HSR)					
		4,650.000 RM		1,860,000,000	279,000,000	641,700,000	973,245,000	3,753,945,000
				400,000.00	60,000.00	138,000.00	209,300.00	807,300.00
25.A.2	3412110	Work Element	Double Track, Direct Fix					
			BART					
		4,650.000 RM		9,300,000	1,395,000	3,208,500	4,866,225	18,769,725
				2,000.00	300.00	690.00	1,046.50	4,036.50
25.A.2	3412120	Work Element	Special Trackwork					
			BART					
		4,650.000 RM		4,650,000	697,500	1,604,250	2,433,112	9,384,862
				1,000.00	150.00	345.00	523.25	2,018.25
25.A.2	3422120	Work Element	Traction Power					
			BART					
		4,650.000 RM		16,275,000	2,441,250	5,614,875	8,515,893	32,847,018
				3,500.00	525.00	1,207.50	1,831.37	7,063.87
25.A.2	3422122	Work Element	Train Control					
			BART					
		4,650.000 RM		9,300,000	1,395,000	3,208,500	4,866,225	18,769,725
				2,000.00	300.00	690.00	1,046.50	4,036.50
25.A.2	3422124	Work Element	Communications					
			BART					
		4,650.000 RM		23,250,000	3,487,500	8,021,250	12,165,562	46,924,312
				5,000.00	750.00	1,725.00	2,616.25	10,091.25
25.A.2	3422130	Work Element	Tunnel Ventilation System - 4 Tunnels					
			BART & HSR					
		4,650.000 RM		20,460,000	3,069,000	7,058,700	10,705,695	41,293,395
				4,400.00	660.00	1,518.00	2,302.30	8,880.30
25.A.2 - Alameda to SF - Bay				1,943,235,000	291,485,250	670,416,075	1,016,797,713	3,921,934,038
				0.00	0.00	0.00	0.00	0.00
25.A.3 - 4th & Townsend BART & HSR Station (San Francisco)								
BART & HSR								
25.A.3	3411122	Work Element	2 -Twin Bored Tunnel, Typical (4 Bores)					
			BART & HSR					
		1,146.000 RM		160,440,000	24,066,000	55,351,800	83,950,230	323,808,030
				140,000.00	21,000.00	48,300.00	73,255.00	282,555.00
25.A.3	3411214	Override	Below Ground Station - BART & HSR (4th / Townsend)					
		1.000 Ea		400,000,000	60,000,000	138,000,000	209,300,000	807,300,000
				400,000,000.00	60,000,000.00	138,000,000.00	209,300,000.00	807,300,000.00

WBS	ELEMENT ID	TYPE / QUANTITY UNIT	DESCRIPTION	COST / UC	SPECIAL COND	ENGR'G & CM	CONTINGENCY	TOTAL
25.A - BART Option 1 - Oakland to San Francisco (Presidio)								
25.A.3 - 4th & Townsend BART & HSR Station (San Francisco)								
BART & HSR								
25.A.3	3412110	Work Element	Double Track, Direct Fix					
			BART					
		1,146.000 RM		2,292,000	343,800	790,740	1,199,289	4,625,829
				2,000.00	300.00	690.00	1,046.50	4,036.50
25.A.3	3412120	Work Element	Special Trackwork					
			BART					
		1,146.000 RM		1,146,000	171,900	395,370	599,644	2,312,914
				1,000.00	150.00	345.00	523.25	2,018.25
25.A.3	3422120	Work Element	Traction Power					
			BART					
		1,146.000 RM		4,011,000	601,650	1,383,795	2,098,755	8,095,200
				3,500.00	525.00	1,207.50	1,831.37	7,063.87
25.A.3	3422122	Work Element	Train Control					
			BART					
		1,146.000 RM		2,292,000	343,800	790,740	1,199,289	4,625,829
				2,000.00	300.00	690.00	1,046.50	4,036.50
25.A.3	3422124	Work Element	Communications					
			BART					
		1,146.000 RM		5,730,000	859,500	1,976,850	2,998,222	11,564,572
				5,000.00	750.00	1,725.00	2,616.25	10,091.25
25.A.3	3422130	Work Element	Tunnel Ventilation System - 4 Tunnels					
			BART & HSR					
		1,146.000 RM		5,042,400	756,360	1,739,628	2,638,435	10,176,823
				4,400.00	660.00	1,518.00	2,302.30	8,880.30
25.A.3 - 4th & Townsend BART				580,953,400	87,143,010	200,428,923	303,983,866	1,172,509,199
				0.00	0.00	0.00	0.00	0.00
25.A.4 - 4th & Townsend to Presidio (San Francisco)								
BART								
25.A.4	3411120	Work Element	Twin Bored Tunnel, Typical					
		7,400.000 RM		518,000,000	77,700,000	178,710,000	271,043,500	1,045,453,500
				70,000.00	10,500.00	24,150.00	36,627.50	141,277.50
25.A.4	3411210	Override	Below Ground Station - BART (Harrison St)					
		1.000 Ea		90,000,000	13,500,000	31,050,000	47,092,500	181,642,500
				90,000,000.00	13,500,000.00	31,050,000.00	47,092,500.00	181,642,500.00
25.A.4	3411211	Override	Below Ground Station - BART (Market St)					
		1.000 Ea		90,000,000	13,500,000	31,050,000	47,092,500	181,642,500
				90,000,000.00	13,500,000.00	31,050,000.00	47,092,500.00	181,642,500.00
25.A.4	3411212	Override	Below Ground Station - BART (Geary St)					
		1.000 Ea		90,000,000	13,500,000	31,050,000	47,092,500	181,642,500
				90,000,000.00	13,500,000.00	31,050,000.00	47,092,500.00	181,642,500.00

WBS	ELEMENT ID	TYPE / QUANTITY UNIT	DESCRIPTION	COST / UC	SPECIAL COND	ENGR'G & CM	CONTINGENCY	TOTAL
			25.A - BART Option 1 - Oakland to San Francisco (Presidio)					
			25.A.4 - 4th & Townsend to Presidio (San Francisco)					
			BART					
25.A.4	3411213	Override	Below Ground Station - BART (Washington St)					
		1.000 Ea		90,000,000	13,500,000	31,050,000	47,092,500	181,642,500
				90,000,000.00	13,500,000.00	31,050,000.00	47,092,500.00	181,642,500.00
25.A.4	3411220	Direct Entry	Below Ground Station - BART (Filmore St)					
		1.000 Ea		90,000,000	13,500,000	31,050,000	47,092,500	181,642,500
				90,000,000.00	13,500,000.00	31,050,000.00	47,092,500.00	181,642,500.00
25.A.4	3411222	Direct Entry	Below Ground Station - BART (Presidio)					
		1.000 Ea		90,000,000	13,500,000	31,050,000	47,092,500	181,642,500
				90,000,000.00	13,500,000.00	31,050,000.00	47,092,500.00	181,642,500.00
25.A.4	3411223	Direct Entry	Presidio Station Parking Structure					
			2000 spaces					
		2,000.000 Ea		50,000,000	7,500,000	17,250,000	26,162,500	100,912,500
				25,000.00	3,750.00	8,625.00	13,081.25	50,456.25
25.A.4	3412110	Work Element	Double Track, Direct Fix					
		7,400.000 RM		14,800,000	2,220,000	5,106,000	7,744,100	29,870,100
				2,000.00	300.00	690.00	1,046.50	4,036.50
25.A.4	3412120	Work Element	Special Trackwork					
		7,400.000 RM		7,400,000	1,110,000	2,553,000	3,872,050	14,935,050
				1,000.00	150.00	345.00	523.25	2,018.25
25.A.4	3422120	Work Element	Traction Power					
		7,400.000 RM		25,900,000	3,885,000	8,935,500	13,552,175	52,272,675
				3,500.00	525.00	1,207.50	1,831.37	7,063.87
25.A.4	3422122	Work Element	Train Control					
		7,400.000 RM		14,800,000	2,220,000	5,106,000	7,744,100	29,870,100
				2,000.00	300.00	690.00	1,046.50	4,036.50
25.A.4	3422124	Work Element	Communications					
		7,400.000 RM		37,000,000	5,550,000	12,765,000	19,360,250	74,675,250
				5,000.00	750.00	1,725.00	2,616.25	10,091.25
25.A.4	3422128	Work Element	Tunnel Ventilation System - 2 Tunnels					
		7,400.000 RM		16,280,000	2,442,000	5,616,600	8,518,510	32,857,110
				2,200.00	330.00	759.00	1,151.15	4,440.15
25.A.4 - 4th & Townsend to				1,224,180,000	183,627,000	422,342,100	640,552,185	2,470,701,285
				0.00	0.00	0.00	0.00	0.00

WBS	ELEMENT ID	TYPE / QUANTITY UNIT	DESCRIPTION	COST / UC	SPECIAL COND	ENGR'G & CM	CONTINGENCY	TOTAL
			25.A - BART Option 1 - Oakland to San Francisco (Presidio)					
			25.A.5 - Other BART Costs					
			Maintenance Facility, ROW , & Easements					
25.A.5	3412301	Override	Allowance for Maintenance Facility Expansion					
		1.000 LS		100,000,000	15,000,000	34,500,000	52,325,000	201,825,000
				100,000,000.00	15,000,000.00	34,500,000.00	52,325,000.00	201,825,000.00
25.A.5	3412310	Override	Allowance for Easements / ROW for Tunnel Segments					
		1.000 LS		40,000,000	6,000,000	13,800,000	20,930,000	80,730,000
				40,000,000.00	6,000,000.00	13,800,000.00	20,930,000.00	80,730,000.00
25.A.5	3412312	Override	Allowance for Easements / ROW for Typical BART Stations					
		8.000 LS		80,000,000	12,000,000	27,600,000	41,860,000	161,460,000
				10,000,000.00	1,500,000.00	3,450,000.00	5,232,500.00	20,182,500.00
25.A.5	3412315	Override	Allowance for Easements / ROW for HSR & BART Station 4th & Townsend					
		1.000 LS		25,000,000	3,750,000	8,625,000	13,081,250	50,456,250
				25,000,000.00	3,750,000.00	8,625,000.00	13,081,250.00	50,456,250.00
25.A.5 - Other BART Costs				245,000,000	36,750,000	84,525,000	128,196,250	494,471,250
				0.00	0.00	0.00	0.00	0.00
REPORT TOTALS				4,810,413,400	721,562,010	1,659,592,623	2,517,048,811	9,708,616,844

WBS	ELEMENT ID	TYPE / QUANTITY UNIT	DESCRIPTION	COST / UC	SPECIAL COND	ENGR'G & CM	CONTINGENCY	TOTAL
25.B - BART Option 2 - Oakland to San Francisco (33rd Ave)								
25.B.1 - West Oakland to Alameda								
BART								
25.B.1	3411120	Work Element	Twin Bored Tunnel, Typical					
		6,850.000 RM		479,500,000	71,925,000	165,427,500	250,898,375	967,750,875
				70,000.00	10,500.00	24,150.00	36,627.50	141,277.50
25.B.1	3411215	Override	Below Ground Station - BART (Alameda Webster St)					
		1.000 Ea		90,000,000	13,500,000	31,050,000	47,092,500	181,642,500
				90,000,000.00	13,500,000.00	31,050,000.00	47,092,500.00	181,642,500.00
25.B.1	3411216	Override	Below Ground Station - BART (Alameda Point)					
		1.000 Ea		90,000,000	13,500,000	31,050,000	47,092,500	181,642,500
				90,000,000.00	13,500,000.00	31,050,000.00	47,092,500.00	181,642,500.00
25.B.1	3411217	Direct Entry	Alameda Point Station Parking Structure 2000 spaces					
		2,000.000 ea		50,000,000	7,500,000	17,250,000	26,162,500	100,912,500
				25,000.00	3,750.00	8,625.00	13,081.25	50,456.25
25.B.1	3412110	Work Element	Double Track, Direct Fix					
		6,850.000 RM		13,700,000	2,055,000	4,726,500	7,168,525	27,650,025
				2,000.00	300.00	690.00	1,046.50	4,036.50
25.B.1	3412120	Work Element	Special Trackwork					
		6,850.000 RM		6,850,000	1,027,500	2,363,250	3,584,262	13,825,012
				1,000.00	150.00	345.00	523.25	2,018.25
25.B.1	3422120	Work Element	Traction Power					
		6,850.000 RM		23,975,000	3,596,250	8,271,375	12,544,918	48,387,543
				3,500.00	525.00	1,207.50	1,831.37	7,063.87
25.B.1	3422122	Work Element	Train Control					
		6,850.000 RM		13,700,000	2,055,000	4,726,500	7,168,525	27,650,025
				2,000.00	300.00	690.00	1,046.50	4,036.50
25.B.1	3422124	Work Element	Communications					
		6,850.000 RM		34,250,000	5,137,500	11,816,250	17,921,312	69,125,062
				5,000.00	750.00	1,725.00	2,616.25	10,091.25
25.B.1	3422128	Work Element	Tunnel Ventilation System - 2 Tunnels					
		6,850.000 RM		15,070,000	2,260,500	5,199,150	7,885,377	30,415,027
				2,200.00	330.00	759.00	1,151.15	4,440.15
25.B.1 - West Oakland to				817,045,000	122,556,750	281,880,525	427,518,796	1,649,001,071
				0.00	0.00	0.00	0.00	0.00

WBS	ELEMENT ID	TYPE / QUANTITY UNIT	DESCRIPTION	COST / UC	SPECIAL COND	ENGR'G & CM	CONTINGENCY	TOTAL
25.B - BART Option 2 - Oakland to San Francisco (33rd Ave)								
25.B.2 - Alameda to SF - Bay Crossing								
BART & HSR								
25.B.2	3411140	Work Element	4 Track Transbay Tube, (BART & HSR)					
		3,670.000 RM		1,468,000,000	220,200,000	506,460,000	768,131,000	2,962,791,000
				400,000.00	60,000.00	138,000.00	209,300.00	807,300.00
25.B.2	3411141	Work Element	2 Track Transbay Tube, (BART)					
		1,580.000 RM		379,200,000	56,880,000	130,824,000	198,416,400	765,320,400
				240,000.00	36,000.00	82,800.00	125,580.00	484,380.00
25.B.2	3411142	Work Element	2 Track Transbay Tube, (HSR)					
		1,310.000 RM		314,400,000	47,160,000	108,468,000	164,509,800	634,537,800
				240,000.00	36,000.00	82,800.00	125,580.00	484,380.00
25.B.2	3412110	Work Element	Double Track, Direct Fix BART					
		5,250.000 RM		10,500,000	1,575,000	3,622,500	5,494,125	21,191,625
				2,000.00	300.00	690.00	1,046.50	4,036.50
25.B.2	3412120	Work Element	Special Trackwork BART					
		5,250.000 RM		5,250,000	787,500	1,811,250	2,747,062	10,595,812
				1,000.00	150.00	345.00	523.25	2,018.25
25.B.2	3422120	Work Element	Traction Power BART					
		5,250.000 RM		18,375,000	2,756,250	6,339,375	9,614,718	37,085,343
				3,500.00	525.00	1,207.50	1,831.37	7,063.87
25.B.2	3422122	Work Element	Train Control BART					
		5,250.000 RM		10,500,000	1,575,000	3,622,500	5,494,125	21,191,625
				2,000.00	300.00	690.00	1,046.50	4,036.50
25.B.2	3422124	Work Element	Communications BART					
		5,250.000 RM		26,250,000	3,937,500	9,056,250	13,735,312	52,979,062
				5,000.00	750.00	1,725.00	2,616.25	10,091.25
25.B.2	3422128	Work Element	Tunnel Ventilation System - 2 Tunnels BART & HSR					
		2,890.000 RM		6,358,000	953,700	2,193,510	3,326,823	12,832,033
				2,200.00	330.00	759.00	1,151.15	4,440.15
25.B.2	3422130	Work Element	Tunnel Ventilation System - 4 Tunnels BART & HSR					
		3,670.000 RM		16,148,000	2,422,200	5,571,060	8,449,441	32,590,701
				4,400.00	660.00	1,518.00	2,302.30	8,880.30
25.B.2 - Alameda to SF - Bay				2,254,981,000	338,247,150	777,968,445	1,179,918,808	4,551,115,403
				0.00	0.00	0.00	0.00	0.00

WBS	ELEMENT ID	TYPE / QUANTITY UNIT	DESCRIPTION	COST / UC	SPECIAL COND	ENGR'G & CM	CONTINGENCY	TOTAL
25.B - BART Option 2 - Oakland to San Francisco (33rd Ave)								
25.B.3 - 4th & Townsend HSR Station (San Francisco)								
HSR								
25.B.3	3411120	Work Element	Twin Bored Tunnel, Typical HSR					
		720.000 RM		50,400,000	7,560,000	17,388,000	26,371,800	101,719,800
				70,000.00	10,500.00	24,150.00	36,627.50	141,277.50
25.B.3	3411208	Override	Below Ground Station - HSR (4th & Townsend)					
		1.000 Ea		230,000,000	34,500,000	79,350,000	120,347,500	464,197,500
				230,000,000.00	34,500,000.00	79,350,000.00	120,347,500.00	464,197,500.00
25.B.3	3422128	Work Element	Tunnel Ventilation System - 2 Tunnels HSR					
		720.000 RM		1,584,000	237,600	546,480	828,828	3,196,908
				2,200.00	330.00	759.00	1,151.15	4,440.15
25.B.3 - 4th & Townsend HSR				281,984,000	42,297,600	97,284,480	147,548,128	569,114,208
				0.00	0.00	0.00	0.00	0.00
25.B.4 - Fremont St to 33rd Ave (San Francisco)								
BART								
25.B.4	3411120	Work Element	Twin Bored Tunnel, Typical					
		7,000.000 RM		490,000,000	73,500,000	169,050,000	256,392,500	988,942,500
				70,000.00	10,500.00	24,150.00	36,627.50	141,277.50
25.B.4	3411201	Override	Below Ground Station - BART (Fremont Street)					
		1.000 Ea		90,000,000	13,500,000	31,050,000	47,092,500	181,642,500
				90,000,000.00	13,500,000.00	31,050,000.00	47,092,500.00	181,642,500.00
25.B.4	3411202	Override	Below Ground Station - BART (4th Street)					
		1.000 Ea		90,000,000	13,500,000	31,050,000	47,092,500	181,642,500
				90,000,000.00	13,500,000.00	31,050,000.00	47,092,500.00	181,642,500.00
25.B.4	3411203	Override	Below Ground Station - BART (City Hall)					
		1.000 Ea		90,000,000	13,500,000	31,050,000	47,092,500	181,642,500
				90,000,000.00	13,500,000.00	31,050,000.00	47,092,500.00	181,642,500.00
25.B.4	3411204	Override	Below Ground Station - BART (Fillmore St)					
		1.000 Ea		90,000,000	13,500,000	31,050,000	47,092,500	181,642,500
				90,000,000.00	13,500,000.00	31,050,000.00	47,092,500.00	181,642,500.00
25.B.4	3411205	Override	Below Ground Station - BART (Masonic)					
		1.000 Ea		90,000,000	13,500,000	31,050,000	47,092,500	181,642,500
				90,000,000.00	13,500,000.00	31,050,000.00	47,092,500.00	181,642,500.00
25.B.4	3411206	Override	Below Ground Station - BART (Arguello)					
		1.000 Ea		90,000,000	13,500,000	31,050,000	47,092,500	181,642,500
				90,000,000.00	13,500,000.00	31,050,000.00	47,092,500.00	181,642,500.00
25.B.4	3411207	Override	Below Ground Station - BART (Highway 1)					
		1.000 Ea		90,000,000	13,500,000	31,050,000	47,092,500	181,642,500
				90,000,000.00	13,500,000.00	31,050,000.00	47,092,500.00	181,642,500.00

WBS	ELEMENT ID	TYPE / QUANTITY UNIT	DESCRIPTION	COST / UC	SPECIAL COND	ENGR'G & CM	CONTINGENCY	TOTAL
25.B - BART Option 2 - Oakland to San Francisco (33rd Ave)								
25.B.4 - Fremont St to 33rd Ave (San Francisco)								
BART								
25.B.4	3411208	Override	Below Ground Station - BART (25th St)					
		1.000 Ea		90,000,000	13,500,000	31,050,000	47,092,500	181,642,500
				90,000,000.00	13,500,000.00	31,050,000.00	47,092,500.00	181,642,500.00
25.B.4	3411209	Override	Below Ground Station - BART (33rd Street)					
		1.000 Ea		90,000,000	13,500,000	31,050,000	47,092,500	181,642,500
				90,000,000.00	13,500,000.00	31,050,000.00	47,092,500.00	181,642,500.00
25.B.4	3412110	Work Element	Double Track, Direct Fix					
		7,000.000 RM		14,000,000	2,100,000	4,830,000	7,325,500	28,255,500
				2,000.00	300.00	690.00	1,046.50	4,036.50
25.B.4	3412120	Work Element	Special Trackwork					
		7,000.000 RM		7,000,000	1,050,000	2,415,000	3,662,750	14,127,750
				1,000.00	150.00	345.00	523.25	2,018.25
25.B.4	3422120	Work Element	Traction Power					
		7,000.000 RM		24,500,000	3,675,000	8,452,500	12,819,625	49,447,125
				3,500.00	525.00	1,207.50	1,831.37	7,063.87
25.B.4	3422122	Work Element	Train Control					
		7,000.000 RM		14,000,000	2,100,000	4,830,000	7,325,500	28,255,500
				2,000.00	300.00	690.00	1,046.50	4,036.50
25.B.4	3422124	Work Element	Communications					
		7,000.000 RM		35,000,000	5,250,000	12,075,000	18,313,750	70,638,750
				5,000.00	750.00	1,725.00	2,616.25	10,091.25
25.B.4	3422128	Work Element	Tunnel Ventilation System - 2 Tunnels					
		7,000.000 RM		15,400,000	2,310,000	5,313,000	8,058,050	31,081,050
				2,200.00	330.00	759.00	1,151.15	4,440.15
25.B.4 - Fremont St to 33rd Ave				1,409,900,000	211,485,000	486,415,500	737,730,175	2,845,530,675
				0.00	0.00	0.00	0.00	0.00
25.B.5 - Other BART Costs								
Maintenance Facility, ROW , & Easements								
25.B.5	3412301	Override	Allowance for Maintenance Facility Expansion					
		1.000 LS		100,000,000	15,000,000	34,500,000	52,325,000	201,825,000
				100,000,000.00	15,000,000.00	34,500,000.00	52,325,000.00	201,825,000.00
25.B.5	3412310	Override	Allowance for Easements / ROW for Tunnel Segments					
		1.000 LS		40,000,000	6,000,000	13,800,000	20,930,000	80,730,000
				40,000,000.00	6,000,000.00	13,800,000.00	20,930,000.00	80,730,000.00
25.B.5	3412312	Override	Allowance for Easements / ROW for Typical BART Stations					
		11.000 LS		110,000,000	16,500,000	37,950,000	57,557,500	222,007,500
				10,000,000.00	1,500,000.00	3,450,000.00	5,232,500.00	20,182,500.00
25.B.5	3412314	Override	Allowance for Easements / ROW for HSR Station 4th & Townsend					
		1.000 LS		25,000,000	3,750,000	8,625,000	13,081,250	50,456,250

UNIT COST DETAIL REPORT

BART OPTION 2 - OAKLAND TO SF (33rd AVE) | COST IN USD | Dec 5, 2006 (Rev A)

WBS	ELEMENT ID	TYPE / QUANTITY UNIT	DESCRIPTION	COST / UC	SPECIAL COND	ENGR'G & CM	CONTINGENCY	TOTAL
25.B.5 - Other BART Costs				275,000,000	41,250,000	94,875,000	143,893,750	555,018,750
				0.00	0.00	0.00	0.00	0.00
REPORT TOTALS				5,038,910,000	755,836,500	1,738,423,950	2,636,609,657	10,169,780,107

WBS	ELEMENT ID	TYPE / QUANTITY UNIT	DESCRIPTION	COST / UC	SPECIAL COND	ENGR'G & CM	CONTINGENCY	TOTAL
			25.F - BART Option F - Fourth Tunnel Bore (Oakland)					
			Broadway Street					
			25.F.1 - MacArthur Station to Oakland East Portal					
			BART					
25.F.1	3412101	Work Element	Demolish At Grade Single Track (Ballasted)					
		840.000 RM		252,000	37,800	86,940	131,859	508,599
				300.00	45.00	103.50	156.97	605.47
25.F.1	3412103	Work Element	Single Track, Ballasted					
		840.000 RM		504,000	75,600	173,880	263,718	1,017,198
				600.00	90.00	207.00	313.95	1,210.95
25.F.1	3412120	Override	Special Trackwork					
			Single Track					
		840.000 RM		630,000	94,500	217,350	329,647	1,271,497
				750.00	112.50	258.75	392.43	1,513.68
25.F.1	3422120	Override	Traction Power					
			Single Track					
		840.000 RM		2,205,000	330,750	760,725	1,153,766	4,450,241
				2,625.00	393.75	905.62	1,373.53	5,297.90
25.F.1	3422122	Override	Train Control					
			Single Track					
		840.000 RM		1,260,000	189,000	434,700	659,295	2,542,995
				1,500.00	225.00	517.50	784.87	3,027.37
25.F.1	3422124	Override	Communications					
			Single Track					
		840.000 RM		3,150,000	472,500	1,086,750	1,648,237	6,357,487
				3,750.00	562.50	1,293.75	1,962.18	7,568.43
25.F.1	3422140	Override	Miscellaneous Modifications					
			MacArthur Stn to Tunnel Portal (East)					
		1.000 LS		2,000,000	300,000	690,000	1,046,500	4,036,500
				2,000,000.00	300,000.00	690,000.00	1,046,500.00	4,036,500.00
25.F.1 - MacArthur Station to				10,001,000	1,500,150	3,450,345	5,233,023	20,184,518
				0.00	0.00	0.00	0.00	0.00
			25.F.2 - Oakland East Portal to Oakland West Portal					
			BART Through 19th & 12th Street Stations					
25.F.2	3411145	Work Element	Mined Tunnel (Under Existing BART Tracks)					
		1,000.000 RM		60,000,000	9,000,000	20,700,000	31,395,000	121,095,000
				60,000.00	9,000.00	20,700.00	31,395.00	121,095.00
25.F.2	3411147	Work Element	Retained Cut and Fill					
		200.000 RM		6,000,000	900,000	2,070,000	3,139,500	12,109,500
				30,000.00	4,500.00	10,350.00	15,697.50	60,547.50
25.F.2	3411149	Work Element	Aerial Structure					
		50.000 RM		1,250,000	187,500	431,250	654,062	2,522,812
				25,000.00	3,750.00	8,625.00	13,081.25	50,456.25

WBS	ELEMENT ID	TYPE / QUANTITY UNIT	DESCRIPTION	COST / UC	SPECIAL COND	ENGR'G & CM	CONTINGENCY	TOTAL
			25.F - BART Option F - Fourth Tunnel Bore (Oakland)					
			Broadway Street					
			25.F.2 - Oakland East Portal to Oakland West Portal					
			BART Through 19th & 12th Street Stations					
25.F.2	3411218	Override	Modify Below Ground Station - BART (12th / City Center Station)					
		1.000 LS		25,000,000	3,750,000	8,625,000	13,081,250	50,456,250
				25,000,000.00	3,750,000.00	8,625,000.00	13,081,250.00	50,456,250.00
25.F.2	3411219	Override	Modify Below Ground Station - BART (19th Street Station)					
		1.000 LS		25,000,000	3,750,000	8,625,000	13,081,250	50,456,250
				25,000,000.00	3,750,000.00	8,625,000.00	13,081,250.00	50,456,250.00
25.F.2	3412112	Work Element	Single Track, Direct Fix					
		1,250.000 RM		1,250,000	187,500	431,250	654,062	2,522,812
				1,000.00	150.00	345.00	523.25	2,018.25
25.F.2	3412120	Work Element	Special Trackwork					
			Single Track					
		1,250.000 RM		937,500	140,625	323,437	490,546	1,892,109
				750.00	112.50	258.75	392.43	1,513.68
25.F.2	3422120	Work Element	Traction Power					
			Single Track					
		1,250.000 RM		3,281,250	492,187	1,132,031	1,716,914	6,622,382
				2,625.00	393.75	905.62	1,373.53	5,297.90
25.F.2	3422122	Work Element	Train Control					
			Single Track					
		1,250.000 RM		1,875,000	281,250	646,875	981,093	3,784,218
				1,500.00	225.00	517.50	784.87	3,027.37
25.F.2	3422124	Work Element	Communications					
			Single Track					
		1,250.000 RM		4,687,500	703,125	1,617,187	2,452,734	9,460,546
				3,750.00	562.50	1,293.75	1,962.18	7,568.43
25.F.2	3422127	Work Element	Tunnel Ventilation System - 1 Tunnel					
			Single Track					
		1,250.000 RM		2,062,500	309,375	711,562	1,079,203	4,162,640
				1,650.00	247.50	569.25	863.36	3,330.11
25.F.2	3422140	Override	West Oakland BART Connection - Misc Structural Modifications					
		1.000 LS		10,000,000	1,500,000	3,450,000	5,232,500	20,182,500
				10,000,000.00	1,500,000.00	3,450,000.00	5,232,500.00	20,182,500.00
25.F.2 - Oakland East Portal to				141,343,750	21,201,562	48,763,593	73,958,117	285,267,023
				0.00	0.00	0.00	0.00	0.00
REPORT TOTALS				151,344,750	22,701,712	52,213,938	79,191,140	305,451,541